

COMPLEMENTARITY IN THE FIRST AND SECOND SYMPHONIES
OF ROSS LEE FINNEY

By

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A DISSERTATION PRESENTED TO THE GRADUATE SCHOOL
OF THE UNIVERSITY OF FLORIDA IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

UNIVERSITY OF FLORIDA

1995

I would like to dedicate this study to my wife, Angelika, who has persevered with me and encouraged me to finish; to my father who has inspired me and kept me going; to Suzanna, who prayed; and Richard, who never lets go. Special thanks to my doctoral committee, especially to Dr. White for his optimism and inspiration.

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Abstract of Dissertation Presented to the Graduate School
of the University of Florida in Partial Fulfillment of the
Requirements for the Degree Doctor of Philosophy

Complementarity in the Symphonies of Ross Lee Finney

by

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December 1995

Chairman: Dr. Budd Udell
Major Department: Music

This study concerns itself with the first two symphonies of Ross Lee Finney. Symphony No.1, written in 1942 is a traditionally tonal piece, where Symphony No.2 is composed utilizing twelve tone technique. Finney's commitment to tonality while composing with all twelve tones was not accepted practice at the time, and he borrowed the term "complementarity" from the quantum physicist Niels Bohr to describe his goal of incorporating two seemingly contradictory ideas into one style. Complementarity had been used by Bohr to explain how light could be seen either as particles or waves, depending on the vantage point.

Analytical techniques unique to this study include (1) reiteration, using one form of the row more than once in succession; (2) prolongation, using long, repeated, or otherwise accentuated notes, especially in the bass; (3) leading tones, from above as well as below to emphasize the

arrival of certain pitches; (4) metric confirmation of important pitches as down beats and (5) triads and perfect intervals in background harmonies, formed by using the middle tetrachord or middle trichords. Melodic material was analyzed and compared, using SSR (steps to skips ratio) values.

Lesson plans incorporating Finney's material into a second year undergraduate program and verbatim transcript of a personal interview with Dr. Finney serve as appendices to the study.

CHAPTER I INTRODUCTION

Of the many possible areas which might be of interest to the music theory pedagogue, curriculum development, methods of teaching basic skills, or analysis of music, this study deals with the last, the analysis of music. Analysis of music, particularly of this century, is an endeavor in which scientifically provable, statistically rigorous conclusions can be elusive at times. As Michael Rogers (1984) puts it, "That the most important issues in music theory can never be pinned down neatly at all four corners is simultaneously the cause of theory's frustration and charm" (p.6). Leonard Meyer (1972) discusses this in Explaining Music:

Disheartened and perhaps dismayed by the speculative uncertainties of theory . . . too many humanists, particularly those in music, have tended to follow the well-worn path of safe scholarship. But to choose prospective certainty over present insight is both mistaken and misguided. It is mistaken, because the search for final, definitive answers is an unattainable goal for those disciplines concerned with understanding and explanation. . . . It is misguided--paradoxically so--because the enduring monuments of scholarship, which have shaped men's minds and beliefs, far from being cautious and circumspect, have been those which illuminated a relationship, a work of art, or a past epoch through a bold encompassing hypothesis. Though in all probability they will subsequently be revised or even rejected, such works and theories endure because they are exciting and seminal: they lead

to new discoveries and further formulations, and thereby continue to affect language, thought and behavior. (p. 25)

It is in the spirit of the kind of research which Leonard Meyer is endorsing that this study proceeds. The present author cannot contend that this is "monumental" research, but would hope that, while avoiding that which is "cautious and circumspect", he might illuminate Dr. Finney's work (work which is in no way characterized by caution, nor circumspection) in a way which would be "exciting and seminal".

Need for the Study

The music of Ross Lee Finney is indisputably an integral part of the history of American music. As will be substantiated in the review of the literature, his importance as a composer and as a pedagogue is documented in virtually every major work on American music. His work has been the topic of articles in major theory journals, as well as numerous doctoral dissertations.

The importance of Ross Lee Finney as a leading teacher in America is confirmed by Edith Boroff (Boroff, 1986):

The doctoral program in composition which Finney established and honed became a model for virtually all subsequent programs in the United States. . . . above all, the appointment (Finney's to the University of Michigan) was crucial for the establishment of composition programs in the American universities. (p.111)

As is shown in the review of the literature, CHAPTER II of this study, dissertations have been completed on the

choral music of Ross Lee Finney, the string quartets, the song cycles, the organ music, the orchestral variations, and the piano quintet. One of the genres of his work which has not been addressed in a dissertation is the symphonic one. During a preliminary telephone conversation with the present author (personal communication, September 10, 1991), Dr. Finney expressed interest in work being done regarding his four symphonies. In an article on his own orchestral works (1967), Finney invites the theorist to analyze his Second Symphony. Again his desire for scholarly analysis of his symphonies was revealed in a personal interview with Dr. Finney on November 3, 1991 (APPENDIX A, INTERVIEW), when he encouraged the present author to work analytically on his symphonies.

The need for the music theorist to uncover and investigate novel approaches to analysis, such as complementarity, is self-evident. Particularly in the twentieth century, the theorist must contribute, in his research, to a body of knowledge which is in flux--a body which not only grows, but changes. Finney's creative application of complementarity to the aesthetic climate of his day exemplifies an accommodation to growth and change which heretofore has not been examined. The importance which scholars such as Boroff and Cooper have attached to the term further fosters the legitimacy of incorporating complementarity into a study of Finney's work.

Background

It would seem appropriate to shed light on two specific areas relating to the particular topic of this study. The first of these areas is complementarity itself, which must be defined and described. The second area is the historical background which moved Ross Lee Finney to employ such a term as complementarity. It is necessary to briefly describe the musical landscape of the early 1950s, particularly in the United States, and to view Finney's thought from that perspective. The development of the present author's own interest in complementarity will also be briefly considered.

Philosophical Background: Complementarity

Webster's Third New International Dictionary (Gove, 1986) gives two helpful definitions of complementarity:

- (1) the interrelationship or the completion or the perfection brought about by the interrelationship of one or more units supplementing, being dependent upon, or standing in polar position to another unit or other units.
- (2) the complementary relationship of the electromagnetic wave and corpuscular theories in explaining the dual character of light and other quantized radiation. (p.464)

Both of these definitions became important to Finney, because the one is simply a manifestation of the other. A brief amount of historical background better pinpoints what attracted Finney's attention.

In the early twentieth century, with the advent of quantum physics, physicists began to be able to investigate the atom. Observing something so small necessitated an invasion of the object to be observed by the subject doing the observing: an invasion of sufficient gravity as to say the object was no longer the same as it would have been if left alone. Hence, one was making observations about the object and the subject taken together. The observations made about light brought about a theory which saw light as particles, and seemed to contradict the "classical" theory of light which observed light to be waves. Holton's article on complementarity (1988) quotes Einstein's prognosis: "We now have two theories of light, both indispensable, but, it must be admitted, without any logical connection between them despite twenty years of colossal effort by theoretical scientists" (p.153).

In 1927 Niels Bohr presented a paper in Como, Italy, in which he suggested that both ideas should be accepted, although they contradict each other, and he described this acceptance of both sides of a dichotomy as complementarity. Holton (1988) states:

Bohr's proposal of 1927 was essentially that we should attempt not to reconcile the dichotomies, but rather to realize the complementarity of representation of events in these two quite different languages. . . . The apparently paradoxical, contradictory accounts should not divert our attention from the essential wholeness (of nature). Unlike the situation in earlier periods, clarity does not reside in simplification and reduction to a single, comprehensible model, but in the exhaustive

overlay of different descriptions that incorporate apparently contradictory notions. (p.154)

Holton points out further that "one cannot construct an experiment which simultaneously exhibits the wave and the particle aspects of atomic matter. A particular experiment will always show only one view or representation of objects at the atomic level" (p.156).

The idea of complementarity became so central to the thought of Niels Bohr that, when he was awarded the Danish Order of the Elephant in 1947, he had a coat of arms made for placement in the church of Frederiksborg Castle which was inscribed "Contraria sunt complementa". At the center of the coat of arms Bohr had the Chinese symbol of yin and yang placed (Holton, p.159).

That Bohr began to find a more universal application of complementarity in fields other than physics becomes clear in an essay written in 1958:

In general philosophical perspective, it is significant that, as regards analysis and synthesis in other fields of knowledge, we are confronted with situations reminding us of the situation in quantum physics. Thus the integrity of living organisms and the characteristics of conscious individuals and human cultures present features of wholeness, the account of which implies a typical complementary mode of description. (Bohr, 1958, p.7)

Holton further describes Bohr's next logical step. "From this point of view we realize that Bohr's proposal of the complementarity principle was nothing less than an attempt to make it the cornerstone of a new epistemology" (p.187). Holton concludes his article lauding the "grandeur" of

Bohr's goal. He then points out that, although "his point of view is accepted by the large majority in physics itself, it would not be accurate to say that it is being widely understood and used in other fields" (p.191).

The present author's interest in the concept of complementarity was born as a result of various discussions about meaning and music, particularly regarding the composition of music in the twentieth century, which took place in graduate courses at the University of Florida, and during the many years spent as a professional musician in Europe. A continuous thread could be found in the discussion of aesthetics, style, and meaning, with which pairs of concepts were woven, that seemed to represent otherwise irreconcilable positions. Though each position might have been considered plausible, reasonable, and logical, when considered on its own, each also excluded the other position entirely. Examples of this sort of dichotomy are found from the beginning of music history to the present day. The Appollonian and Dionysian schools of aesthetic thought in ancient Greece pitted the cerebral against the sensual. The early 17th century Florentines contested the practice of the Renaissance by elevating the text to an equal status with the music. Hanslick and Gurney waged war in the late nineteenth century over the question of extra-musical meaning. There are no extant examples of ancient Greek music which might provide material for a real comparison between the Appollonians and the Dionysians.

However, the other two examples, that of the Florentines and the other of Hanslick v. Gurney, represent bodies of music which stand up well to the test of time. The theories and aesthetics behind these examples were constructed so as to disallow all relevancy of the opposing camp. Though each position contradicts the other, each one, if taken by itself, seems to be true. This is the essence of complementarity.

Historical Background: Ross Lee Finney

The question to be addressed in this dissertation concerns the work of Ross Lee Finney and his use of the concept of complementarity, particularly in his symphonies. It would seem appropriate to describe the artistic and aesthetic climate, in which Finney felt that the concept of complementarity best described the development of his personal style, and to explain how he used complementarity to lend legitimacy to his calling himself a serialist while remaining a tonalist. It must be made clearly understood that this joining of terms, i.e., tonal-serialist, was considered an oxymoron at that time.

Ross Lee Finney was born in Wells, Minnesota, in 1906. His brother Theodore was to become a prominent musicologist, publishing a History of Music in 1935 which made a lasting impression on American musicology. His other brother Nathaniel became a journalist and was the person who introduced Finney to the idea of complementarity.

Finney played the cello as a child and also learned guitar, with which he accompanied folk music. The Finney family played as a quartet, albeit a rather unorthodox one, consisting of Mother at the piano, Theodore on the violin, Ross on the cello, and Nathaniel (the future journalist) on the trumpet (Boroff p.106).

Finney studied at the University of Minnesota under Donald Ferguson, and at Carlton College. Like many of his contemporaries he went to Paris and studied with Boulanger (1927-28). Upon his return to America, he studied at Harvard with Burlingame (1928-29). Finney began his teaching career in 1929 at Smith College. During his tenure at Smith, Finney spent a year in Vienna under Alban Berg (1931-32), an influence which was to become crucial in Finney's later development. In 1935 he studied with Roger Sessions, a time which was also to have no small impact on him.

Soon after Finney returned to his teaching career, after finishing his service in World War II, he was offered the position of composer in residence at the University of Michigan. Later, Finney wrote concerning his creativity after the war, "that my war experiences in the office of Strategic Services had made me feel that my musical vocabulary was inadequate" (Goossen p.170).

In seeking to expand his musical vocabulary Finney was one of the first Americans to exploit the new twelve-tone technique while still writing basically tonal music. He found legitimacy for this in the concept of complementarity.

Historical Background: The Early Post World-War II Period

One group of composers and critics after World War II, referred to as the post war American avant-garde serialists, claimed that tonality was dead, writing tonal music was no longer an option, and only music written in an atonal twelve-tone serial technique had any validity. The opposing group of composers and critics, referred to as tonalists, held that atonal music was not an answer to the dilemma of which direction modern music should take, but rather an artificial construct which at best provided intellectual titillation, and at worst was even anti-musical.

The reasoning of the former group, the post-war American avant-garde serialists, found its roots in the theoretical thought of the Second Viennese School. Though Arnold Schönberg established this movement, its American version, which bloomed after World War II, found the work of Schönberg's student, Anton Webern, to be more representative of what was considered a truly "new music". It is quite clear that this "new music" was intended to be radically different from the old, especially with regard to tonality. Although Schönberg objected to the term atonality (Schönberg, 1975 p.210-211), closer examination of his writings reveals that atonality indeed was what he advocated.

A style based on this premise treats dissonances like consonances and renounces a tonal center. (Schönberg, p.217)

Even a slight reminiscence of the former tonal harmony would be disturbing, because it would create false expectations of consequences and continuations. The use of a tonic is deceiving if it is not based on all the relationships of tonality. (p.219)

As Nachum Schoffman (1990) states, ". . . he (Schönberg) insisted that the new style entailed avoidance, not only of tonality, but of all functionality" (p.40). To renounce tonal centers, to shun even the slightest reminiscence of tonal harmony and to strictly avoid all functionality can quite legitimately be described and defined as atonality.

One member of the post-war American avant-garde serialists group was Milton Babbitt. Watkins (1988) writes:

Although the intimidating remarks of Boulez, who stated that he considered all music that was not serial to be useless, had their effect, the quasi-mathematical approach of Milton Babbitt (b.1916), whose speculations led to totally controlled pieces such as Three Compositions as early as 1947, more directly influenced a decade of American composers loosely aligned as the Princeton Group. . . . Babbitt's first attempts at total serialism marginally antedate those of his European colleagues, and at any rate were independently arrived at. The parallel with the simultaneous but separate investigations of Schönberg and Hauer in the early 1920's with respect to dodecaphonic organization is brought to mind. (p.528)

That Babbitt wanted all aspects of his pieces to be controlled by the serial technique is clear:

My new works . . . were concerned . . . above all with applying the pitch operations of the twelve-tone system to non-pitch elements: durational rhythms, dynamics, phrase rhythm, timbre, and register, in such a manner as to preserve the most significant properties associated with these operations in the pitch

domain when they are applied to other domains.
(Chase, p.586)

This attempt to write truly "new music," with not only a new definition of harmony, but also a redefinition of all other aspects of music must be clearly seen in order to understand Finney's own innovative adaptation of serialism.

In one of the introductory chapters of The New Music: The Avant-garde since 1945 (Brindle, 1987), in a chapter entitled "The Webern Cult", Reginald Smith Brindle states, "Webern's work . . . had the great appeal of being rational yet pointing the way to still further rationalization" (p.8). Though Brindle is describing the scene in Germany, Chase (1987) confirms that there was also a "Webern Cult" in the U.S.A:

Of the immediate followers of Schönberg, the one who exerted the greatest influence in America was Anton Webern (1883-1945). This was accomplished through his music and his ideas, for he never came to this continent; moreover, his widest impact was posthumous. (p.583).

The opposing camp, which is called for lack of a better word, the tonalists, were those who did not see in serialism an answer to the question of how music was to be composed in the latter half of the twentieth century. There were many advocates of tonalism, and some were quite vocal. All of them were accused of everything from conservatism to being outright reactionary.

One argument against twelve-tone serialism was that by including everything (all 12 tones) distinctiveness is lost and monotonous sameness sets in. Howard Hanson (1960), in

his book Harmonic Materials of Modern Music, sheds light on why this is so. His discussion of intervals, scales, and chords which result from projecting intervals begins with the discussion of the perfect fifth. He observes that the circle of fifths produces a new interval at each step until the seventh projection. The triad C-G-D contains two fifths and a major second. The tetrad C-G-D-A has three fifths, a minor third, and two major seconds. This pattern continues then up to the heptad C-G-D-A-E-B-F#, which happens to be a major scale and has six fifths, three major thirds, four minor thirds, five major seconds, two minor seconds, and a tritone. Each interval is represented in a different strength, according to the frequency of its appearance. After this the octad, nonad, decad, and undecad contain ever more similar numbers of intervals until the duodecad or twelve-tone scale includes an equal number of each interval, except the tritone, twelve fifths, twelve major thirds, twelve minor thirds, twelve major seconds, twelve minor seconds, and six tritones. Hanson concludes:

The sound of a sonority--either as harmony or melody--depends not only upon what is present, but equally upon what is *absent*.

The pentatonic scale in the perfect-fifth series sounds as it does not only because it contains a preponderance of perfect fifths and because of the presence of major seconds, minor thirds, and the major third in regularly decreasing progression, but also because it *does not contain* either the dissonant minor second, nor the tritone.

On the other hand, as sonorities are projected beyond the six-tone series, they tend to lose their individuality. All seven-tone series, for example, contain all six of the six basic

intervals, and the difference in their proportion decreases as additional tones are added.

This is probably the greatest argument against the rigorous use of the atonal theory in which all twelve tones of the chromatic scale are used in a single melodic or harmonic pattern, since such patterns tend to lose their identity, producing a monochromatic effect with its accompanying lack of the essential element of contrast. (p.33)

Another argument leveled against the legitimacy of the twelve tone technique was that it provides, in the vocabulary of information theory, no redundancy. First, there is the threat of structural redundancy (Radocey and Boyle, p.170). Because there is no tonality, no home key, no starting point which must somehow be returned to, the listener has no place to start and no expectation of where he will be led. Because he cannot be led to expect anything, he cannot be surprised, and he cannot be fulfilled.

Hindemith (1939) wrote of the "so-called atonalists" that they do not really eliminate tonality but rather "avail themselves of the same tricks as those sickeningly wonderful merry-go-rounds. The idea is to disturb the customer's feeling of gravitational attraction" (p.54). He continues:

So-called atonal music which pretends to work without acknowledging the relationships of harmonies to tonics, acts just the same as those devilish gadgets; harmonies both in vertical and in horizontal form are arranged so that the tonics to which they refer change too rapidly. Thus we cannot adjust ourselves, cannot satisfy our desire for gravitational orientation. Again spatial dizziness is the result. . . . I do not see why we should use music to produce the effect of seasickness, which can be provided more convincingly by our amusement industry. (p. 54)

Further discussing what would in the language of information theory be called perceptual redundancy, Hindemith writes:

A musical structure which, due to its extreme novelty, does not, in the listener's mind, summon up any recollections of former experiences, or which incessantly disappoints his constructive expectation, will prevent his creative cooperation. (Pleasants, p.108)

Though seeking freedom, the atonalists accepted constraints of a totally rational, even mathematically conceived construction. This was thought by some to be destructively excessive. Arthur Honegger observed, "They remind me of galley-slaves who, having thrown off their chains, voluntarily hang two hundred pound balls on their feet in order to run faster" (Pleasants, p.109). Hindemith states, ". . . is it not odd that the same composers who espouse harmonic freedom . . . have fallen, in structural matters, into a formalism compared with which the artifices of the early Netherlands contrapuntalists are child's play" (Pleasants, p.109).

Finney (1989) himself describes the situation with which he was faced:

Like many other composers in the fifties, I was forced to consider the split that had occurred with Schönberg's introduction of a twelve-tone technique which had been placed dogmatically in opposition to traditional tonal theory. To the music critic of the fifties a composer was either a twelve-tone composer or he was not. A battle raged, and to a certain extent it still does. (p.169)

Finney realized that the ideas of tonality and serialism seemed to be exclusive procedures in composition. He found, however, in the idea of complementarity, as developed by the physicists Niels Bohr and Robert Oppenheimer, a concept which opened the door to treating musical composition in two different ways at the same time. Edith Boroff (1986):

The fruits of Finney's long thoughts included the clarification of the two ideas that would remain vital elements of his work: that the small means (the factors of fabric) and the large means (the factors of form) are not the same; and that pulls and counterpulls could be savored, structured, and used in composition; this important principle he called complementarity. (p.110)

Paul Cooper (1967), writing about Finney in the Musical Quarterly, states:

In the 1950's the composer's (Finney's) philosophy crystallizes in the principle of complementarity, derived in part from the thinking of leading physicists. Succinctly stated, the principle provides that no work of art can be analyzed from a single point of view. What fits the large time-span will not adequately control the minutiae of pitch and rhythm and small design; vice versa, what can control and motivate the minutiae of pitch and rhythm cannot adequately organize the large time-span. This constant dualism runs through all of Finney's music of the last 15 years. (p.2)

Cooper then quotes Finney:

There is an alchemy (borrowing Hans David's term) that takes place--a sort of dualism between means and ends: that my conscious manipulation of means does not automatically control or explain the ends. This latter belief does not lead me to deny the ends (emotional content), nor does it lead me to exaggerate the means (compositional devices). (p.2)

Research Questions

By use of different techniques of analysis a discussion of and answers to the following questions will be sought:

1) What relationship, if any, in what Finney called small and large means (see definitions below), can be found between Finney's First Symphony, written in 1943 (before complementarity), and his Second Symphony (with complementarity), completed in 1959?

2) In what ways might the study of complementarity and, more particularly, the symphonies of Ross Lee Finney be incorporated into a general study of twentieth-century music in an undergraduate theory curriculum? This question will be addressed in the chapter "Applications to Teaching Music Theory".

Limitations

In the Second Symphony there is some serialization of rhythm which is not relevant to this study and will not be considered. This study will concern itself primarily with questions of pitch.

Gidley (1963) expressed the following skepticism in a review of the Second Symphony which appeared in Notes:

The work is not a solution to the problem of serial-tonal fusion. . . . The serial procedures are there on paper only . . . If the idea of fusion of the two approaches involves the concept of an audible musical interdependence of one on the other, then this attempt cannot really be considered successful. (p.405-6)

Cooper, however, felt quite to the contrary:

At no point has the author observed a schism between the idealized and the musical realities in Finney's works. Conversely, the composer's efforts indicate that his philosophy is germane to his creativity and that it is constructive in influence. (p.2)

Assessing Finney's success in "fusing" the two ideas of tonality and serialism will not be part of the present research.

Definitions

A number of terms are of particular importance in this study:

Atonality: Much has been said and written about what atonality is and what it is not. The simple definition given by Paul Griffiths (1986) as "the absence of tonality" will be the definition used in this study (see Tonality below).

Complementarity: 1) The interrelationship or the completion or the perfection brought about by the interrelationship of one or more units supplementing, being dependent upon, or standing in polar position to another unit other units; 2) The complementary relationship of the electromagnetic wave and corpuscular theories in explaining the dual character of light and other quantized radiation (Gove, p.464).

Hexachord: A pitch-class set with six pitches. This particular size of pitch-class set is important, because six

is half of twelve, and represents a more readily negotiable chunk of information than all twelve tones do. Finney frequently used sets of six pitch-classes, i.e., hexachords.

Hexachordal Combinatoriality: A special relationship between two series-forms where a hexachord of one series-form has the same pitch class content as a hexachord in another series-form.

Large means: Those sections larger than a phrase, often called sections of a piece.

Pitch: Any single note in a single register, no matter what its spelling (Lester p.76), regardless of octave displacement.

Pitch-class: "All pitches which are octave duplications of one another" (Lester p. 76).

Pitch-class set: A group of pitch-classes, each different from the other (Lester, p.81), regardless of order.

Serialism: This term expresses the sense of what Kostka (1990) calls "classical serialism" (p.206), i.e., the method which Schönberg devised in 1921, whereby one composed "with 12 tones that are related only one with another". The term serialism will be used, when the pitches have been serialized, and total serialism for music in which the other elements, rhythm, dynamics, instrumentation, etc. have been serialized.

Series, and Series-Form: According to Lester (p. 178) "the term *series* refers to an ordering of the twelve pitch-

classes and to all forty-eight forms of the series. The term *series-form* refers to any one form of the given series". The series forms are the prime (P), the retrograde (R), the inversion (I), and the retrograde inversion (RI). Each of these forms can be expressed in twelve transpositions.

Small means: Those divisions of a piece as large as a phrase, or as small as a two-note motive. Finney refers to the minutiae of pitch in the small means.

Steps to skips ratio (SSR): SSR is an instrument devised by the present author to compare the number of steps with the number of skips in any given melody. SSR is the decimal expression of the ratio of steps in a melody compared to the number of skips. For example, a melody with 18 steps and 10 skips represents the ratio of 18:10. This is expressed as an SSR of 1.8. The number of repeated notes is not taken into account with this particular instrument, nor is the size of any particular skip. A more complete description of the development and use of this term will be presented in the third chapter, Methodology.

Tetrachord: A collection of four pitches, from four different pitch classes.

Tonality: According to Finney, tonality is pitch polarity, which functions in the macrostructure (large means), but not necessarily in the microstructure (small means). Hence in this study, a broad use of the term will be employed, covering a larger area than that of functional

harmony, and which will include those structures which cause a piece like Finney's Second Symphony to be in A, or Bartok's Music for String Instruments, Percussion and Celesta to be in A. Centricity (relationships of tonal centers in the macrostructure) as used by Strauss (p.93) is another term for this.

Tone row: The particular order of 12 pitches which the serial composer chooses as a basis for composition.

Trichord: A collection of three pitches from three different pitch classes.

Organization of the Study

The study is organized into seven chapters. After this introduction, CHAPTER I, which offers background information, definitions, and a statement of the problem, there is a review of the literature, CHAPTER II, including a discussion of articles, books, and dissertations written on and by Ross Lee Finney. This chapter also lists the sources from which the analytical techniques to be used in this study are drawn.

CHAPTER III, METHODOLOGY, outlines in detail the analytical techniques to be employed in this basically descriptive research.

CHAPTER IV, SYMPHONY No.1, contains an analysis of Symphony No.1 (relating to research question no. 1), with regard to the form, tonality (large means) and melodic and motivic elements (small means) of the work.

CHAPTER V, SYMPHONY NO.2 contains an analysis of Symphony No.2 parallel to that of the First Symphony in CHAPTER IV (i.e. relating to the first research question). The form, the large means, and the small means of each movement will be considered.

CHAPTER VI, A COMPARISON OF THE FIRST AND SECOND SYMPHONIES, contrasts one symphony with the other in terms of form, large means and small means.

APPENDIX A, TEACHING FINNEY'S CONCEPT OF COMPLEMENTARITY IN THE UNDERGRADUATE MUSIC THEORY CLASSROOM, contains some ideas about possible use of the material found in Ross Lee Finney's symphonies in the undergraduate theory classroom (research question no. 2).

APPENDIX B, INTERVIEW, contains a verbatim account of an interview of Dr. Finney by the present author.

Conclusion

The main goal of the study is to increase the knowledge of and about Ross Lee Finney's symphonies. His use of the concept of complementarity and the position he was to attain as a teacher make such a study more than worthwhile for the aspiring theory pedagogue. His appropriation of terminology (complementarity) from the hard sciences (physics) is certainly innovative, and is exemplary of a positive approach to complex aesthetic problems found in the music of the twentieth century.

CHAPTER II REVIEW OF THE LITERATURE

The name Ross Lee Finney is mentioned in virtually every textbook on American music in the twentieth century. Austin's Music in the 20th Century (1966, p.439), Chase's America's Music From the Pilgrim's To the Present (1987, p.583-84), Grove's Dictionary of Music and Musicians (Boroff, 1980), Homer and Pisk's History of Music and Musical Style (1963 p.657-658), Hitchcock's Music in the United States; a Historical Introduction (1988, p.221, 228, 246, 247), and Slonimsky's Music Since 1900 (1971, p.1075, p.1175) are just a few examples of references to Finney's work in standard texts.

Articles by Finney

The present author's attention was initially attracted to Finney's Second Symphony, and the need for an analysis of it, by Finney himself, in an article he wrote for Robert Stephen Hines in The Orchestral Composer's Point of View (Hines 1970). This article includes a perusal of the orchestral works, in chronological order. To introduce the discussion of the Second Symphony, Finney states:

While it does not interest me to analyze my Second Symphony (1959), I might point out a few details that must be considered by the scholar who

wishes to make an analysis and might even be suggestive to a conductor performing the work . . .
 . (Hines p.68)

Finney continues only very briefly, (Hines, p.69) discussing row functions in pitch, harmony, inner metrical segments, etc. This gives further strength to Finney's invitation to analyze the Second Symphony.

Hines discusses complementarity in his introduction to Finney's article, ascribing to it a quintessential significance for Finney's development as a composer:

Probably the most significant date in the career of Finney is 1950, the year he composed the Sixth String Quartet, wherein he adopted the principle he described as a method of "complementarity". The pitch details of the quartet were ordered on the basis of the twelve-tone technique, while the larger form still adhered to tonal tradition. (p.62)

Regarding later works, including the Second Symphony, he proceeds, "Even though the serial devices and tonal schemes used in each work since 1950 have varied somewhat, the fundamental principles have remained intact" (Hines, p.62).

Without using the term "complementarity" Finney describes this development as a shift that resulted in his use of serialization (Hines, p.66). The conflict which arose between material and form, Finney states, "led me to a somewhat unconventional solution that will be apparent in all my later orchestral work" (Hines, p.66). He pays tribute to Alban Berg calling him "my teacher" (though he had many), and to Schönberg and Roger Sessions (Hines, p.67).

The article in The Orchestral Composer's Point of View substantiates the importance of the development of what Hines here calls a "method" of complementarity. Both Hines and Finney himself see its inception as the most crucial development in Finney's style; however, there is no further background information on the evolution of the concept, no details on the use of the term by Niels Bohr and Oppenheimer, nor is any attention paid to the use of complementarity in any specific pieces. A further question remains: How does complementarity function in Finney's music, not as a philosophical theory, but as a procedure?

In 1967, Finney wrote a short article on Webern's Opus 6, No.1, Sechs Stücke für Orchester (Finney, 1967). Finney discusses the tonality he hears in the music of a composer who was considered to be the leading proponent of atonal music. He describes leading tones, and implied tonal centers, i.e, functions of tonality. He states in his conclusion, "Here in this small piece is revealed a method of giving pitch orientation and tonal design to music without following traditional diatonic practice"--music which is not tonal, where tonal centers are avoided and function resisted. Finney states in 1991:

I don't believe in a type of 12-tone serialism that implies I have to accept all tones as equal. Equality of tones is to me one of the catastrophes of 12-tone composition. . . . I believe that in a musical work there are some tones that should be more equal than others. (Peacock p.7)

Typical for Finney is his insistence on allowing the ear to be the final arbiter of musicality, not the eye; "I find no way to react to music except as I hear it--as I hear the implication of the notes" (Hines, 1967, p.74).

Finney's own published discussion of complementarity is limited to a single chapter in Frederic Goossen's edition of Finney's writings, Thinking About Music, The Collected Writings of Ross Lee Finney (Goossen 1991), called "Musical Complementarity". Finney relates that he "knew nothing about the philosophical background of Bohr's theories" (Goossen, p.171), when he began to employ the principle of complementarity. He got the idea through discussions with the physicist Robert Blacher of the California Institute of Technology and from his journalist brother Nathaniel S. Finney who had met and talked with Niels Bohr.

Finney describes the dilemma succinctly: "To the music critic of the fifties a composer was either a twelve-tone composer who wrote atonal music or he was not" (Goossen, p.169). Compounding this pressure to be one or the other was a principle Finney learned in his studies with Nadia Boulanger and Roger Sessions that "every note of a piece should be analyzable from the standpoint of tonal intention" (Goossen, p.172). Finney then asks if this adherence to tonality in both the large and small means is necessary: "Was it possible that no single system was adequate for analyzing these two different functions?" (Goossen, p.172).

At this point Finney employs the example of a surveyor for whom a single line is inadequate for determining the exact location of a single point. One needs two intersecting lines to precisely locate a point. Finney surmised that there might also be a necessity of employing different approaches to define the large means and the small means. He continues:

"It was here that I began talking to my brother Nat and to my friend Bob Blacher and that for the first time the concept of complementarity arose. The situation in physics was not unlike the dualism in music: what could measure waves could not measure particles. For one, the classic Newtonian theory was valid, while for the other quantum theory was necessary" (Goossen, p.172)

In this article Finney defines tonality. He finds the word itself "bothersome" (p.172) but defines it as "pitch polarity, related to but not dominated by, the acoustical ordering of sound" (Goossen, p.172). He continues by defining the small means: "The microcontinuity is really not structure at all, but motion from point to point" (p.173).

Another article published in Goossen's book, entitled "Analysis and the Creative Process" (originally published in the Scripps College Bulletin in 1959, a year after Finney finished the Second Symphony), contains a further discussion of another aspect in musical composition in which a certain duality arises. Finney states, "There have always been two sides to music: the intellectual and the emotional; or to state it another way, music is both invention and expression" (Goossen, p.133). He makes the case for the

universality of this two-sided quality of music, tracing it back to Apollos and Dionysus of the Greeks, to Plato's Republic, and to the Middle Ages and Renaissance. Finney concludes, ". . . still today the creative artist must work, half-seeing, half-blind, with some aspects of music as precise as mathematics and others as subjective as religion" (Goossen, p.133). Although he does not mention complementarity at this point, the duality described, and its universality, seems to stem from a recognition that two things which seem to contradict each other can and do co-exist both in the physical world and in the creative act.

Articles and Books About Finney

Paul Cooper places complementarity right in the opening sentence of his article, which appeared in The Musical Quarterly, "The Music of Ross Lee Finney" (Cooper, 1967):

Ross Lee Finney's music finds its generation and dimension in opposites; the composer refers to this phenomena as the process of complementarity" (Cooper, p.3).

Cooper broadens the idea far beyond the question of pitch to include "rhythmic vitality tempered by lyricism, sophisticated ideas disguised in simplicity, and a broadness of gesture without pomposity" (Cooper, p.3). All other discussions of complementarity in the literature limit themselves to pitch, so the question of broader applications is one which no one, other than Cooper in this introductory paragraph, has addressed. Cooper's definition of

complementarity is, in this author's opinion, the best to be found, and it is quoted verbatim in CHAPTER I, "Definitions", under Complementarity.

In further discussing complementarity, Cooper asserts that Finney avoids the pitfalls which can occur, when a composer applies a "strong philosophy" (Cooper, p.2) to the creative process. Moreover, Cooper observes a unity between the "idealized and musical realities in Finney's works" (p.2). In other words, Cooper deems Finney successful in his appropriation of complementarity from the realm of physics and application of it to the creative process of musical composition.

Cooper points out that Finney's concern about tonality, and particularly about tonal function, does not by necessity involve triadic function, but rather "pitch-level orientation", or tonal centers (Cooper, p.4). Consistently, those who write about Finney confirm Finney's emphatic statement, "I am a tonalist. Very much a tonalist!" (Peacock, 1991, p.8). Cooper states that this tonalism becomes possible for Finney, whether "deploying diatonic, chromatic or hexachordal resources" (Cooper, p.4) through the process of complementarity.

The work of Finney from the thirties to the sixties is covered by Cooper who finishes his article with a quote from a review of a performance of the Second Symphony by the Philadelphia Orchestra in New York in 1959. The New York Herald Tribune wrote "another American dodecaphonist's work,

this time a symphony, was performed--and no one ran for the exits. In fact at the end of the performance, Ross Lee Finney received applause amounting to an ovation." (Cooper, p.16). The fact that he is both a "tonalist" and a "dodecaphonist" is not a contradiction, because complementarity dictates that "no work of art can be understood or analyzed from a single point of view" (Cooper, p.2).

Cooper's article is a general overview of Finney's work. The crucial position of complementarity in Finney's work is confirmed, but there is too little detail. There are questions that remain unanswered. How did complementarity evolve in Finney's thought? How does complementarity function in specific pieces, i.e., can it be exhibited analytically in the music? Cooper opens the door to speculation about a broader use of complementarity but does not go any further.

Another review of the Second Symphony, written in the New Yorker in 1959 (Sargeant, 1959, p.144) recognizes the duality of Finney's approach. "His system, which is not an unattractive one, permits him a sort of thundering eloquence, that is far removed from the gray, drab texture of most twelve-tone music." Sargeant, however, perceives the tonality on what he calls a "moment by moment" basis. This perception of tonality in what Finney called the "small means" is not necessarily without merit, and will, of course, be considered in this study as each row, and each

hexachord (small means) may or may not have tonal implications.

A more critical review of the Second Symphony appeared in Notes (Gidley, 1963). After applauding Finney's orchestral craftsmanship and the unity of the piece, Gidley concludes:

Despite these favorable qualities, however, the work is not a solution to the problem of serial-tonal fusion. . . . The serial procedures are there on paper only.

He continues:

If the idea of fusion of the two approaches involves the concept of an audible musical interdependence of one on the other, then this attempt cannot really be considered successful.

Gidley ascribes to Finney the attempt to "fuse" the two methods, where complementarity is the opposite of fusion. In complementarity both serialism and tonality remain intact. Complementarity is not a dialectic nor a synthesis, but an affirmation of two points of view.

Edith Boroff in Three American Composers (Boroff 1986) published her study of Irwin Fischer, Ross Lee Finney, and George Crumb (a student of Finney's). Boroff divides the chapter on each composer into two parts, one being biographical, the other a survey of his works. The main thrust of the biographical section of the chapter on Finney is to place him between the tradition of American university composers (beginning with John Knowles Paine, Horatio Parker, and Edward Macdowell, and including Carl Ruggles and John Cage) and those Boroff calls American conservatory

composers (being apprenticeship trained and having roots in the performance of music, often in popular styles). This latter group includes Charles Ives, Rubin Goldmark, and Amy Cheney Beach, but also Roy Harris, Howard Hanson, Samuel Barber, and Aaron Copland. Boroff describes Finney as "a hybrid. Living virtually all his life in the university world, he was nonetheless, for his vital early years, apprenticeship trained" (Boroff, p. 105). To identify Finney as a university composer is self evident; he worked his entire life at colleges and universities. Unlike many other university composers, however, he refused to define himself in a theoretical camp, nor did he move "inward to a theoretical stance which excluded responsibility toward either the performer or the audience" (Boroff, p.253). He continued as a performer, albeit a performer of folk music, and he made himself available to performers wherever he taught. Boroff describes the two positions even more succinctly in her concluding words on Finney (grouping him here with Fischer):

Their generation was divided between those who acknowledged Western music and the Romantic--and particularly the German--and post-Romantic styles, and those who were bent upon repudiating or even destroying them. The conservatory composers were "acknowledgers" fairly much as a bloc; the iconoclasts and destroyers were given harbor in the universities, fairly much as a bloc. (Boroff, 254)

The unique position Finney holds as a bridge between university composers and conservatory composers represents

the very aspect of Finney's musical personality which would propel him toward a principle like complementarity. He was an "acknowledger" of Western tradition, and that included tonality and the functional relationships of one tone to another. At the same time he was interested in expanding his creative palette. Finney's refusal to join any one camp was also a characteristic of his philosophy of teaching. Boroff writes "his students were not indoctrinated; . . . he strove chiefly to provide the frame in which they could develop self-criticism and musical independence, both of which he had good reason to value" (Boroff, p.253).

Boroff discusses the principle of complementarity in the biographical portion of the Finney chapter. She writes:

The fruits of Finney's long thoughts included the clarification of two ideas that would remain vital elements in his work: that the small means (the factors of fabric) and the large means (the factors of form) are not the same; and that the pulls and counterpulls could be savored, structured and used in composition; this important principle he called complementarity. (Boroff, p.255)

The influence of non-musical writers from the areas of physics and humanistic philosophy is cursorily mentioned. There is no detailed account of this influence in the article by Boroff.

"Finney was unparalleled as a teacher", Boroff (p.111) writes as she discusses in some detail Finney's role and impact as a teacher (p.111). She credits the doctoral program which he established with being the model for

"virtually all subsequent programs in the United States" (p.111).

In Finney's biography Boroff provides another example of his being attracted to "pulls and counterpulls" in his acquaintance with one Roberto Gerhard, whom Finney met during the war. Gerhard was a student of the arch conservative Spaniard Felipe Pedrell and the avant-gardist Arnold Schönberg. Boroff states, "Such counterpulls, more extreme than those in Finney's own formative years and a decade earlier, made Gerhard a strong intellectual independent, a man of constructive mind from whom Finney was ready to profit" (Boroff, p.117). Years later Finney quoted Gerhard in the context of criticizing conventional music theory programs with their emphasis on triadic harmony: "It doesn't pay dividends any more, as my friend Roberto Gerhard used to say" (Goossen, p.71). (Research into influence on Finney by independent artists like Roberto Gerhard would also provide fruitful background material.)

The second portion of the chapter on Ross Lee Finney (Boroff, p.145) examines his music piece by piece, genre by genre, discussing the songs, the chamber music, the orchestral works and the choral works. Boroff discusses complementarity and the pulls and counterpulls of the "small means" and "large means" (Finney's terms) implicit in his application of the principle of complementarity. The names Bohr and Oppenheimer are mentioned, but no detail is provided. Boroff's (p.131-139) extended discussion of the

Sixth String Quartet sheds light on both Finney's developing serialism (small means) and his tonal magnetism (large means).

From a letter written in 1979, Boroff quotes Finney on pre-World War II attitudes which generally prevailed. "In the thirties the idea of combining a serial organization with a pitch-functional orientation was unthinkable. There was a split in the road and one had to choose which one led into the future" (Boroff, p.116).

Finney's intentions after the Second World War were not to find a third road in the middle between the old and the new, between the serial style and the pitch functional orientation, but, by use of the concept of complementarity, to become capable of walking on both roads.

Boroff has made a substantial contribution to scholarship as a result of her treatise on Finney. Her essay in Three American Composers gives a good general overview of his life and works. It serves well as a starting place in understanding complementarity but leaves many questions unanswered. What particular aspects of Bohr's and Oppenheimer's thought influenced Finney? Given that Bohr saw complementarity as a universal principle which governed not only physics but philosophy and the arts (Holton, 1988, p.191), Finney's application of complementarity certainly deserves more attention than the beneficial but cursory exploration of Edith Boroff. In her selection of pieces to analyze, she did not turn to the

Second Symphony, which seems to be a culminating point in Finney's compositional development.

Doctoral Dissertations

Apple-Monson (1986, p.9) cursorily discusses complementarity in her dissertation on Finney's piano works. She relies on Cooper's article yet includes an interesting quote from a personal interview with Finney. The question was why Finney began to write serial music in the fifties. He answered:

It just happened. This seems inexplicable if you don't understand at least two things. As a student of Alban Berg, I was given pretty good instruction in the technique; I knew the technique and had been thinking about it for a long time. So it wasn't a case of my suddenly saying, "Well, now I'm going to go into twelve-tone technique; I better get some books and read up on it." I never turned to books about it. Secondly, I was involved in the Second World War, and this was a devastating experience to me, as it was for a lot of people. I have such memories of the utter hopelessness of trying to express the feelings I had in the same way that I had done before the war. In other words, when I got back from this, I felt that I had to have more expressive stuff in my vocabulary. Then in a certain work, I suddenly found myself writing twelve-tone technique. It wasn't a conscious effort; I never made big charts. And as a matter of fact, I don't even think that my style has changed too much, because the twelve-tone technique concerns primarily the minutiae of style, and that pitch polarity determines the large design. I don't find the two things in conflict. So my music remains neither fish nor fowl.

The chapter Finney himself wrote in 1988 on complementarity (Goossen, 1991) contains an uncannily similar description of his own development. One might

conjecture that he has often described this growth process to his students and thus could describe it once and repeat it five years later almost verbatim. Apple-Monson does not shed any further light on complementarity. Her analyses of the piano works include the consideration of serial and hexachordal organization, without, however, concentrating on complementarity per se. The question of complementarity in the symphonies of Ross Lee Finney is, of course, not addressed.

In a dissertation on twentieth century American compositions for organ, Little (1975) discusses Finney's five Fantasies for organ. She makes an interesting statement about the "row" in serial music:

A row is simply material from which a composer draws pitch relationships, one element of his piece. His preference for tonal or non-tonal idioms need not be related to his craftsmanship, inspiration and integrity. There are numerous ways of organizing and manipulating a row, even to create a tonal center (note, interval or chord), cadences, and triadic harmony. (Little, p.30)

This statement which is presented as standard practice, does not represent the climate of the fifties; however, Finney's more flexible use of serial technique and his unswerving commitment to tonality helped bring about a new climate, which Little's statement does appropriately describe.

Amman (1972) concludes in his dissertation, The Choral Music of Ross Lee Finney, that Finney has "amalgamated the styles of the last three decades of choral music into a

product of undisputed craftsmanship" (p.58). Amman's work is more of a review of the choral works for prospective performers than an attempt to delve into the theoretical background of Finney's work. He does not mention complementarity, nor, by the very nature of his topic, the symphonies.

Wyatt (1973) includes a discussion of Finney's Variations for Orchestra in his dissertation, The Mid-20th Century Orchestral Variation, 1953-1963, Analysis of Selected Works by Major Composers. Other composers included in this list are Alberto Ginastera, Dallapiccolo, Otto Luening and Vladimir Ussachevsky (a joint effort), Leslie Bassett, and Carlos Suinach. Wyatt chooses six compositional areas to analyze and compare. They are 1) thematic material, 2) form, 3) harmony, 4) tonality, 5) rhythm and meter, and 6) orchestration. Choosing certain areas in which each piece is to be considered provides an exemplary consistency to the study; however, neither complementarity or any of Ross Lee Finney's symphonies are considered.

Conclusion

The music of Ross Lee Finney has been the object of a relatively large body of research. This has included his songs, his organ music, the string music, and the piano music. The area of his symphonies has, however, been neglected except for the article by Onderdunk (p.250) on the

Third Symphony. The pursuit of doctoral research into this area is warranted by the importance of Finney as a teacher and as a composer as witnessed by the work which has already been done in other areas of his musical output. Not one doctoral dissertation nor any other major piece of research has been undertaken to study Finney's symphonies as a whole. The concept of complementarity has been mentioned, but not utilized in analysis.

The music theory teacher must constantly be searching for ways to include music of this century in the curriculum. One must also face the responsibility of exposing students to the trends which have developed in this country. A study of the symphonies of Ross Lee Finney will be a significant contribution to the body of knowledge from which theory pedagogues draw.

CHAPTER III METHODOLOGY

Introduction

In choosing the methodology for answering the two proposed research questions, extremes found in the world of research have been scrutinously avoided. The one extreme is represented by that which is so trivial that it is, although easily researchable, unworthy of serious consideration. The other is that which is so profound that it can be investigated only in ways too subjective to be described as scientific research. Rogers refers to this problem as the Bierstedt's Paradox: "Studies that are reliable (statistically rigorous) are usually trivial: the most valuable studies are scientifically unreliable" (p.6). After further consideration of the fact that music theory evades being "captured cognitively by mathematical models, tools and methods" (p.6), Rogers reaches conclusions about the study of music theory which quite fittingly describe this present author's own considerations.

In any event, we may say that music theory appears to be more like philosophy than mathematics. Theory, then, is not just something to learn but is also something to do. It represents not just a cluster of answers but a range of options for thinking about and listening to music. Music theory, in my opinion, is not a subject like pharmacy with labels to learn and

prescriptions to fill, but is an activity--more like composition or performance. The activity is theorizing: i.e. thinking about what we hear and hearing what we think about--and I would include even thinking about what we think. (p.7)

It is this "activity" of "theorizing" which is the main thrust of this study. Certain well-proven tools and methods have been used.

The analytical approach of this study provides information which can be placed under the umbrella of "descriptive research" as defined by Isaacs and Michael (1981), "to describe systematically a situation or area factually and accurately" (p.42). Although they further limit the meaning of the term "descriptive",

It does not seek or explain relationships, test hypotheses, make predictions, or get at meanings and implications. (p.46)

they also allow leeway for a broader understanding of the term.

Research authorities, however, are not in agreement on what constitutes 'descriptive research' and often broaden the term to include all forms of research except historical and experimental" (p.46).

This study will not exclude the explanation of relationships nor of meanings and implications. Hence, it is descriptive research in the broader sense.

Methodology for Research Questions No.1

The first research question was described in CHAPTER I as follows:

What relationship, if any, in what Finney called small and large means (see definitions below), can be found between Finney's First Symphony, written in 1943 (before complementarity), and his Second Symphony (with complementarity), completed in 1959?

It is in the spirit of what Rogers calls "theorizing" that these research questions have been addressed. The first two symphonies of Ross Lee Finney will be analyzed movement by movement, theme by theme, and note by note. They will be described. Special attention has been paid to the use of tonality in the larger means and to pitch content in the smaller means. Identifying complementarity, which Finney sees as an independence of the small means from the large, has been the goal of the analysis.

A comparison between the large means of each symphony has been made comparing the tonalities of larger sections and the relationship of those tonalities. Relationships have been investigated within each work, and also between the symphonies.

At the level of macroanalysis (White, p.18), the question of form will also be considered. This relates directly to complementarity only where the form itself is influenced by harmonic and tonal considerations of the large means. Because the question of form is so crucial to all analysis, a study of Finney's symphonies without its consideration would be flawed from the start. In comparison of forms, use has been made of standard nomenclature for musical motives, phrases, periods, etc., as described in

many standard reference books on form, such as Berry's Form in Music (1986). Again, formal relationships within each work, as well as between the two symphonies have been investigated.

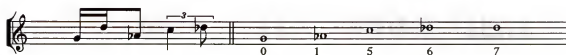
The small means have been compared by use of interval vectors, by use of SSR (steps to skips ratio as defined in the first chapter) and by comparing the general contours of melodic material.

Howard Hanson (p. 25) initiated the interval vector approach to contemporary sonorities which indicates the number of each interval contained in any given sonority. His system implemented the following order of intervals, according to their relative consonance: perfect fifths (and fourths), major thirds (and minor sixths), minor thirds (and major sixths), major seconds (and minor sevenths), minor seconds (and major sevenths), and tritones. The letters

p = perfect 4ths and 5ths
 m = major 3ds and minor 6ths
 n = minor 3ds and major 6ths
 s = major 2ds and minor 7ths
 t = minor 2ds and major 7ths

are used in Hanson's system to designate these intervals as shown. Although Hanson was the originator of the method, Alan Forte's (1973) adaptation of it, which describes sonorities in what are called interval vectors, has become the standard system. White (p.199-123) succinctly outlines this procedure. One first puts the pitches of a given pitch-class set in normal order, i.e., encompassing the smallest interval possible. The lowest pitch is represented

by a zero, and each other pitch by the number of half steps between itself and the lowest pitch. Just as in Hanson's system, the concept of equating any given interval with its inversion (fourth=fifth, major third=minor sixth, etc.) is used. This is referred to as Mod-12. For example, the following five-note pitch-class set (Ex.3.1) is represented



Ex.3.1
Sample Set

by (0,1,5,6,7). The interval vector produced is found as follows (Ex.3.1a):

0	1	5	6	7	(half steps from e up to f, a, b flat, and b)
4	5	6			(half steps from f up to a, b-flat and b)
1	2				(half steps from a up to b flat and b)
	1				(half steps from b flat up to b)

Ex.3.1a
Interval Vector Example

The interval content of three minor seconds, one major second, no minor thirds, one major third, three perfect fourths, and two tritones is expressed 3 1 0 1 3 2. This is the interval vector. It has a certain character, which is decidedly different from a sonority which has, for instance, an interval vector of 1 2 3 1 2 1. A sonority with less perfect intervals and a predominance of minor thirds has a different sound from the first example, labeled 3 1 0 1 3 2. It is as distinct from the other example as one mode from

another in Renaissance music, or major from minor in common-practice harmony.

As Lester points out: "It is the pitch-class sets that provide the raw material for harmony and melody in this music. In this sense, pitch-class sets in non-tonal music are analogous to scales in tonal music. Like tonal scales, non-tonal pitch-class sets provide the notes out of which melodies and harmonies arise" (p.88).

Hanson originally used the pitch-class set model to effectively describe tonal music, so it is an ideal tool to use in comparing the two works of Finney, one being tonal in a traditional sense and the other using serial means to produce the "minutiae of pitch". The pitch-class set model, however, does not take into account the order of the pitches (nor the rhythms involved). Hence contour of melodies cannot be compared using this method. Melodies from both of these works have been compared as to 1) possible characteristic intervals within melodies, 2) possible characteristic range and contour of given melodies (considering the lowest and highest note and where these fall within phrases), and 3) possible characteristic rhythms in melodies.

Methodology for Research Question No.2

The second research question was described in CHAPTER I as follows:

2) In what ways might the study of complementarity and, more particularly, the symphonies of Ross Lee Finney be incorporated into a general study of twentieth-century music in an undergraduate theory curriculum?

Most textbooks used in undergraduate music theory courses have a chapter on atonal and serial music, where almost all of the examples come from the music of the composers of the Second Viennese School, Schönberg, Berg, and Webern. Ottman's widely used Advanced Harmony (1984) contains excerpts from Arnold Schönberg's Gurre-Lieder, In Diesen Wintertagen, Pierrot Lunaire, Fünf Klavierstücke, Quartet No.4, and Klavierstück, Op.33b; Anton Webern's Concerto for Nine Instruments; and Berg's Violin Concerto. One excerpt from a piece by Messiaen, called Canteyodjova, and another excerpt from Quaderno Musicale Di Annalibera by Dallapiccola are the only non-Viennese examples. There are no examples of American serialism.

It is the present author's intention to implement the lesson plans in CHAPTER VII in the theory class room at Trinity International University, where he is presently employed. The text Music in Theory and Practice, by Bruce Benward, is used in the freshman and sophomore theory sequence. Finney's material will be exploited as a supplement to form a unit in the second year class; Harmony II, and to represent a further study in the upper level theory course: Form and Analysis. Finally, Finney's memorizable melodies represent segments which will be used as sight singing examples in the course: Sight Singing.

To use Finney's symphonies in a discussion of serialism will be a refreshing change for a second year theory class. The concept of complementarity is a challenging one, which will require students to think beyond the comfortable categories of tonal vs. atonal music.

Conclusion

Analysis, according to White (1984) is more than mere observation which shows no relationships. Analysis must "show how music proceeds in time from one moment to the next" (p.4), say something "about the larger time span--how it contributes to what will follow", and relate "the excerpt to the general style of the composer or the time in history when it was composed" (p.5). These three aspects, moment to moment (small means), larger time span (large means), and comparing one piece to others by the same composer has been the main thrust of the analysis of the symphonies of Ross Lee Finney.

CHAPTER IV SYMPHONY No.1

It would not be appropriate to title this chapter "Complementarity in Ross Lee Finney's First Symphony", because the First Symphony was written before Finney became interested in complementarity. Indeed, it was written at a time when the need for the term complementarity, at least in Finney's own work, had not yet arisen. Finney wrote the First Symphony within the parameters of tonally functional harmony. There were no opposite or seemingly contradictory elements to be dealt with, as there would be in the Second Symphony. The analysis of the First Symphony will provide the background for a comparison of the two symphonies in CHAPTER VI.

The First Symphony was completed in 1943. In it Finney employs an orchestra of conventional size with the conventional instrumentation. There is no expanded percussion section, no harp, no piano. Except for the inclusion of the celeste, the orchestra is the same as that of Beethoven's Ninth or Brahms' Fourth.

The work can be divided into four movements. The first is a short Introduction followed by Dramatic Statement. The second movement is titled Elegy, and the third, Scherzo. Immediately following the Scherzo, i.e.: *attacca subito*, is

the Interlude, which is a short (11 measures) recapitulation of the Introduction. It functions in the same preparatory fashion as the Introduction did, this time for Fanfare. Fanfare is short (60 measures) and acts as a coda for the entire symphony.

The four movements are:

- I Introduction and Dramatic Statement
- II Elegy
- III Scherzo
- IV Interlude and Fanfare

Analysis

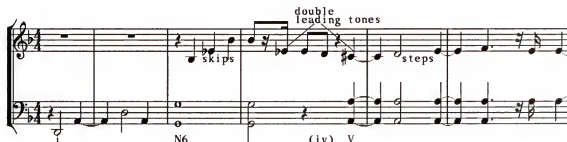
Form and Tonality (large means)

The Introduction is a simple folk-like melody (Ex.4.1) sounded in the English horn and supported by a tenor



augmentation. Harmonically, the Introduction is in D, beginning with the dorian mode on D (measures 1-11), and culminating in the natural D minor scale (measures 11-25). The raised third at the end of measure 22 hints for a moment at D major. The raised third of the dominant harmony is avoided, which is one of the primary factors contributing to the modal flavor of the movement. The key of D is established through the conventional tonic dominant relationship found in the outline of initial English horn melody (Ex.4.1).

The harmonic structure of the body of the first movement consists of the conventional tonic-dominant-tonic motion of the sonata-allegro form. The first theme (measures 25-49, Ex.4.2) in the tonic key of D is followed



Ex.4.2

First Symphony, Dramatic Statement, measures 26-30

by a second theme in the dominant (measures 78 -120) and a development section (121-155). The return of the key of D in measure 156 (Ex.4.3) does not coincide with a literal return of the first theme. However, the return to D as a harmonic recapitulation is clearly evident. The number of measures, 130, between the first statement of the theme in D



Ex.4.3

First Symphony, Dramatic Statement, measures 156-158

(measure 26) and the recapitulation is approximately twice the number of measures (61) from the recapitulation to the end of the movement. This places the return to the tonic at the climactic $2/3$ point, sometimes referred to as the Golden Mean, where many classical composers and twentieth century composers such as Bela Bartok chose to locate the return of the initial key.¹ The Neapolitan sound of measure 158 (Ex.4.3) clearly corresponds to measure 28, and, although the thematic material itself is not repeated, the harmony confirms a recapitulation in the classical sense.

The harmonic vocabulary in the body of the first movement is marked by root movement by half-step. Examples of this are found throughout the score, but especially at strategic points in the form such as the initial statement of the first theme and the second theme.

The first theme itself contains the notes of a major triad on the lowered second scale degree (Neapolitan 6th), a half step above the root (Ex.4.2). Finney seems to be

¹Fibonacci, the medieval mathematician who developed algebra, was the originator of a number series from which the concept of the "golden mean" evolved.

fascinated by this kind of half-step relationship. He often employs a double leading-tone idea. The root of the Neapolitan 6th, E flat, descends half a step to D (Ex.4.2) and the raised leading-tone, C sharp in the dominant harmony, also ascends half a step to D. Two leading-tones make the motion towards D even more compelling than one.

The B section (measures 76-120) contains a passage (Ex.4.4) incorporating a melody in F minor, over a



Ex.4.4
First Symphony, Dramatic Statement, measures 86-88

major-minor seventh chord, a half-step below on E (measure 86-88). This idea is repeated in measures 108-111 (Ex.4.5), with clarinets in F minor accompanied by horns in E major.

Another example of root movement by half-steps is found in measures 107 and 108 (Ex.4.5), where the F sharp minor harmony gives way to an F major chord in the trumpets. This F major chord then accompanies a passage which clearly outlines an E minor triad, another half-step below.

The second movement, marked *Elegy*, contains some lush post-romantic harmonies which, as in Wagner and then in earliest Schönberg, threaten at times to wander outside of the parameters of functional harmony, only to arrive at some

The image displays a musical score for measures 107-111 of the First Symphony, Dramatic Statement. The score is written in 4/4 time and consists of two systems. The first system features three staves: the top staff is for strings, the middle staff is for trumpets, and the bottom staff is for cellos and basses. The second system shows two staves: the top staff is for F sharp minor and the bottom staff is for E minor. The score includes measure numbers 107, 109, 110, and 111.

Ex.4.5

First Symphony, Dramatic Statement, measures 107-111

recognizable tonal cadence after all. The totality, however, of the movement finds its harmonic scheme, like the first movement, in the motion from the tonic of B flat major (measures 1-40) to the dominant of F major (measures 41-85) and back to the tonic (measures 86-105). In the Elegy, the return of the tonic coincides exactly with the return of the beginning thematic material, and is found comparatively later in the movement than was the case for the recapitulation in the first movement. Thus, the movement is simply in ternary form.

The harmonic vocabulary of the Elegy is marked by a recurring plagal cadence (IV-I). However, the IV chord has an added 6th and 9th (Ex.4.6), produced by using the three fifths above the E flat root. These are played as quadruple stops on the cello, using all four strings. This rather



Ex.4.6
First Symphony, Elegy, measures 1-4

open plagal sound is reminiscent of Copland or Roy Harris and sounds typically American.

Another characteristic in the harmonic vocabulary of the Elegy is the use of dissonant added tones. The major-minor sound is the one most frequently employed (Ex.4.7), which, with its "blue-note" blurring of the mode, is again typically American.

Elegy
measure 7

Elegy,
measure 15

Mm

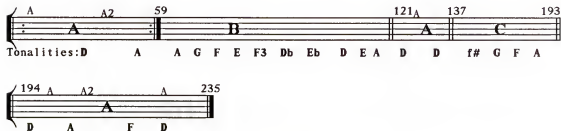
MM7/mM7

Ex.4.7
First Symphony, Elegy, measures 7-10, 15

A second example of this major-minor sound is found in section B in measures 45 (Ex.4.8), where there is a D major

notes of the diatonic scale in non-resolving chords"
(Griffiths, p.134).

The fourth movement, marked Scherzo, is in rondo form
(Ex.4.10). It begins with a melody formed from the notes of



Ex.4.10
First Symphony, Scherzo

the pentatonic scale on D which is reiterated, with or without repeats, three times throughout the movement. The form is best represented as ABACA, which is clearly derived from the classical rondo form.

The initial melody of the A section (Ex.4.11) is full



Ex.4.11
First Symphony, Scherzo, measures 1-7

of syncopation and is marked "humorously". The syncopations and the pentatonic nature of the melody are, again, typically American.

The initial statement of the A section of the Scherzo ends with the following melody (Ex.4.12), which eventually modulates to the dominant. This will be called A2.



Ex.4.12
First Symphony, Scherzo, measures 15-16

The thematic material of the B section is based on a developmental treatment of a short, two measure segment found in A2. Using this motive (Ex.4.13), there is a brief



Ex.4.13
First Symphony, Scherzo, measure 25-26

six measure return to D (measure 59-64) followed by a section in G major (measure 68-77). Brief excursions into the keys of F major (measures 78-81), G major (measures 82-86), E major (87), F sharp major (measure 88), and again G major (measures 89-90), precede a more extended section in D flat major (measures 93-105). The last measure of this section (106, Ex.4.14) is an altered E flat major chord, followed by the dramatic return of D major. This use of D flat major and E flat major, double leading tones, from above and below, to D

The musical score consists of two systems. The first system covers measures 103 to 105. Measure 103 is marked with a 'cresc.' (crescendo) and a 'b2.' (second ending). The second system covers measures 106 and 107. Measure 106 is marked with a 'cresc.' and a 'b2.' (second ending). Measure 107 is marked with a 'ff' (forte) and a 'b2.' (second ending). The score is in D major and 3/4 time. The instrumentation for measures 103-105 is woodwinds and high strings. The instrumentation for measures 106-107 is bassoons, horns, and low strings.

Ex.4.14
First Symphony, Scherzo, measures 103-107

major, is striking. It is interesting that at the climax of the crescendo (Ex.4.14), when D major returns (measure 107), Finney leaves the violins and woodwinds in E flat, thus

disguising the arrival of the tonic until the theme itself (also in D) returns 14 measures later, in measure 121.

The A theme, in a truncated form, returns in measure 121, again in the bassoons. Only the A1 material is restated at this point. The material designated A2 is omitted.

The C section (beginning in measure 137) has two main motives. The one (Ex.4.15) is a driving rhythmic figure, first appearing in the brass in D major (Finney changes the key signature from one flat to two sharps at this point). The other is a soaring lyrical melody in the woodwinds (Ex.4.16).



Ex.4.15
First Symphony, Scherzo, measures 138-144



Ex.4.16
First Symphony, Scherzo, measures 146-158

The movement ends with a final repetition of section A in the bassoons, including A2, in a legato style, and a last statement of A1, pianissimo in the cellos.

The final movement of the First Symphony begins with Interlude, which is an abbreviated reiteration of the Introduction and serves as an introduction to Fanfare. The melody is again given to the English horn, almost immediately transferred to the flutes and then back to the English horn.

Fanfare is written with the key signature of D major. The movement contains two main rhythmic motives, each of which are typical for a fanfare (Ex.4.17 and Ex.4.18)



Ex.4.17
First Symphony, Fanfare, measures 1-4



Ex.4.18
First Symphony, Fanfare, measures 28-32

The first 16 measures (measures 12-27) of the Fanfare utilize the first of these rhythmic motives. This will be called the A section. The second motive is introduced in measure 28, in the strings, and continues until measure 53. This is the B section of the Fanfare. In measure 52, the

first motive re-enters to drive the last nine measures of the symphony to its conclusion. Thus, the Fanfare is, like the Elegy, in a three part form, A-B-A.

The harmonic scheme of the Fanfare is, like the other movements of the symphony, basically I-V-I. Although the B section (measures 28-52) clearly begins on the subdominant, the climactic fortississimo (measure 39) and the last two measures before the return of D, are clearly in the key of A, the dominant. Although the double leading tone is not employed at this point, the resounding D flat major sonority in measure 50, three measures before the return of D major is further evidence of Finney's fascination with half-step relationships.

Melodic Considerations (small means)

In attempting to compare the First Symphony, written with a traditional understanding of tonality, with the Second Symphony, written with the serial twelve-tone technique, the question of melody can be addressed only with some difficulty. In the First Symphony, the composer limits himself to seven diatonic notes, and in the Second Symphony, he uses all twelve. However, a comparison of the intervallic content and of contours is possible, and will shed light on the similarities and differences between the two works.

Finney's melodies in the First Symphony are comprised of a preponderance of step-wise motion. The initial melody

in the Introduction (Ex.4.1) is made up of 19 steps, but only three thirds, four fourths and one fifth. This represents a steps to skips ratio of 19:8 (SSR = 2.375). The first theme of the Dramatic Statement is more disjunct, beginning with one second, one fourth, and two fifths, but the consequent phrase (Ex.4.19) balances this with entirely



The beginning of the Elegy (Ex.4.21) is another example



Ex. 4.21
First Symphony, Elegy, measures 1-9

of Finney's use of linear, step-wise motion. The movement is almost entirely by step. The ratio of steps to skips is 19:2 (SSR = 9.5). There is one skip of a third at the peak of the crescendo to mezzo-forte and another at the peak of the melody on F at the end of the phrase. This attention to shape and contour is typical for Finney. The contour is that of an ascending line.

The first theme (A1) of the Scherzo (Ex.4.22) contains



Ex. 4.22
First Symphony, Scherzo, measures 1-7

more disjunct motion. But when the pentatonic scale, which contains two skips of its own, is taken into account, there are again twice as many steps as skips (SSR = 2.0). The contour rises to a single peak and then falls.

The second half of the A section (A2) contains a steps to skips ratio of 28:10 (SSR = 2.8). However, six of the

skips are at the end of A2 where the dominant seventh chord is outlined (Ex.4.23). The contour is rising and then



Ex.4.23
First Symphony, Scherzo, measures 15-26

falling with one peak.

The melody in the C section of the Scherzo (Ex.4.24) contains a lower ratio of steps to skips (SSR = 1.8). This



Ex.4.24
First Symphony, Scherzo, measures 146-158

section stands out in the Scherzo because of that. It should be pointed out that every time the contour includes an interval larger than a fourth, it is consequently filled

in with steps or smaller intervals. The general contour of this passage is rising and then falling after reaching a single peak.

The ratio of steps to skips in the first motive of the Fanfare (Ex.4.25) is 5:2 (SSR = 2.5). It should be observed



Ex.4.25
First Symphony, Fanfare, measures 1-4

that there is a preponderance of repeated notes in this figure. The contour is rising, falling, rising, falling with two peaks.

The second theme begins with the skips which outline the G major triad (Ex.4.26). After that, there are no skips, so the ratio of steps to skips remains high, 11:3 (SSR = 3.66).

Conclusion

Ross Lee Finney, in his First Symphony, utilizes traditional forms. The Sonata-Allegro form, the Rondo form and the three part form are employed without much disguise. Finney is concerned with the classical question of balance. The traditional forms provide him with that balance. The harmonic structures (large means) rest upon the tonic-dominant polarity of the common practice period.

29 30

ff marcato
strings

G Major

quartal harmony

31 32

seconds

quartal harmony

Ex. 4.26
First Symphony, Fanfare, measures 28-32

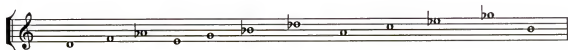
The harmonic vocabulary (also large means) of the piece is marked by root movement by half-steps and by frequent employment of double leading tones at crucial junctures. There is some use of pan-diatonicism and a free interchange of modes which is best described as modal ambiguity.

The melodic material of the work displays a preponderance of step-wise motion. Skips are employed to outline triads and to accent dynamic or melodic peaks. Large skips are consequently filled in with steps or smaller intervals. The contours of the melodies are either rising-falling, or simply ascending. Finney's melodic contours often contain one peak.

Ross Lee Finney's Symphony No.1 exhibits much of the craftsmanship which would later reserve him a place among the names of America's leading twentieth century composers. His sense of formal balance, and his lyrical lines will remain a characteristic of his later work, even when he uses the twelve-tone system. The sounds to which he is attracted--open quartal harmonies, pentatonic melodies, and modal scales--are all unmistakably American. Finney himself pointed out to the present author in a personal interview on November 3, 1991, (APPENDIX A, INTERVIEW) that one of the characteristics of American music is a tendency to employ an even, steady motor-like pulse. This is found, of course, in jazz, as Finney was quick to point out, but also in much music by American composers. The First Symphony maintains a steady motoric pulse, with a studious avoidance of rhapsodic passages where a sense of pulse is momentarily lost. This is yet another typically American characteristic.

CHAPTER V
SYMPHONY No.2

Finney's Second Symphony, written in 1959, does not represent his first efforts in applying the dodecaphonic technique to the medium of the orchestra. In 1957 he wrote Variations for Orchestra, a short piece based on a twelve-tone row by Dallapiccola. This row (Ex. 5.1) is far more



Ex.5.1
Dallapiccola's Row

disjunct than the ones Finney chose for the Second Symphony, and the melodic results are accordingly more disjunct. This particular row has no steps whatsoever, yielding a steps to skips ratio of 0:11 (SSR = 0.0).

The Dallapiccola row is indeed extremely disjunct. However, the interval content of the row is also one which would be of particular interest to a self-proclaimed "tonalist" like Finney. The Dallapiccola row contains eight minor thirds, or nine, if the row is reiterated, two major thirds and a perfect fourth. The diminished sound of the row is striking. The tonal underpinning of the row is also confirmed by its last three tones which form a major triad.

The Second Symphony was commissioned by the Koussevitsky Foundation in 1958. Finney writes that no commission has ever meant more to him (Finney, 1970. p. 67). He continues:

Since almost none of my orchestral music had been performed to that date, it was inevitable that I should be considered a composer of chamber music, but my interest in the orchestra had increased rather than diminished, and the hope that I might at least hear a major work stimulated me greatly. I had also reached a point in my use of row technique where I felt the need of the large orchestra. I had just completed my String Quintet for the Elizabeth Sprague Coolidge Foundation, and the row I had used seemed to contain all sorts of possibilities that I had not touched upon. What is perhaps more to the point, an orchestral work had been forming in my mind for several years, and this row gave a new direction to my ideas, especially in the way it might control segments of time--harmonic and melodic durations and the like. It seemed to bring into focus several new tendencies in my music, and the large orchestra seemed the right medium for their solution. (Finney. 1970, p. 67-68)

Indeed, the Second Symphony implements an orchestra of considerably larger dimensions than the First Symphony:

- 3 flutes
- 2 Oboes
- 1 English Horn
- 1 Clarinet in Eb
- 2 Clarinets in Bb
- 1 Bass Clarinet
- 2 Bassoons
- 1 Contrabassoon
- 4 Horns in F
- 2 Trumpets in C
- 3 Trombones
- 1 Tuba
- Timpani
- Percussion
- Piano
- 2 Harps
- Strings

Analysis: The First Movement

Form

The question of form affects the large means more than the small means, but will be dealt with independently in this study. The first movement is palindromic in form (arch form), an example of Finney's affinity for the symmetrical. The first section (A) begins *Allegro tempestoso* (measures 1-41) and returns (A1) at the end of the movement (measure 209-247). The second section (B), still *Allegro tempestoso* (42-72) concludes with a four measure *un poco ritardando*. This section returns (B2) in measure 190. The tempo marking *Allegro marcato* in measure 72 marks the beginning of section C (measures 72-100), which returns (C2) in measure 154. The two middle sections will be called D1 and D2 are marked *Andante teneramente*, (measures 101-126), and *Allegro capriccioso* (measures 128-153).

Thus the form can be described :

A1 B1 C1 D1 D2 C2 B2 A2

The Row

The row which Finney chose for this particular work (Ex.5.2) deserves attention. It affects the question of small means more than the large, but will, like the question of form, be dealt with independently in this study. The row can be divided into two hexachords (Ex.5.3A), each of which



Ex.5.2
The Row for the First Movement of the Second Symphony
(Row 1)

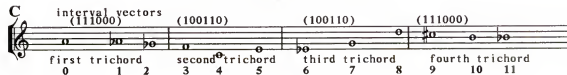
Dividing the Row into Hexachords



Dividing the Row into Tetrachords



Dividing the Row into Trichords



Ex.5.3
Divisions of the Row

has the same interval content. The first six tones (first hexachord) not only have the same interval vector (323421) as the last six notes (second hexachord), but, if one of the hexachords is reversed, the order of the intervals in each hexachord is also identical. Thus the row is symmetrical, and, if the second hexachord is inverted, forms a palindrome. Finney is drawn to symmetrical ideas like the

palindrome, which is the epitome of symmetry, in both the small and the large means. In fact, the entire symphony is united by the palindrome, in that Row I is used in the first and last movements, while Row II is used in the two middle movements). The intervals, minor second, major second, minor second, perfect fourth, all in one direction, up or down, followed by a major third in the opposite direction, are found in all series forms, Prime, Inversion, Retrograde, and Retrograde Inversion. In one sense this limits the composer, because there are not really 48 different forms of the row, but only 24. On the other hand, the unity of the piece is enhanced, because one is actually dealing not with a twelve note pattern, but rather with one of six notes.

When the row is divided into tetrachords (Ex. 5.3B), each tetrachord is a mirror. The first tetrachord and the last represent a mirror in each form of the row. The interval vector of these tetrachords contains two minor seconds, one major second, two minor thirds and a major third (212100).

The middle tetrachord (pitches 4-7 of the row) represents a major triad with a minor third (C-E-Eb-G in the P0 series form). This allows Finney to employ major or minor triads without violating the row. Along with the perfect intervals (see discussion of trichords below) this choice of pitches for the row is utilized by Finney to give certain sections of the movement a tonal color. The interval vector of the middle tetrachord contains one minor

second, two minor thirds, two major thirds and a perfect fourth (102210)².

When the row is divided into tetrachords, the perfect intervals, which are characteristic of the end or beginning of each hexachord, now represent the distance between the tetrachords, i.e. they are not part of a tetrachord, per se.

Any repetition of the row in the same series form produces four notes which are purely chromatic (Ex.5.3B). Finney employs this pattern frequently as filigree, as will be seen later (measure 31 in Ex.5.7).

When the row is divided into four parts (Ex.5.3C), the first and last trichords have the same interval vector, each containing a half step, whole step and a minor third (111000). The middle two trichords are also intervallically the same, each containing a minor second, a major third and a perfect fourth (100110), thus also having the same interval vector. Finney exploits the predominance of the perfect interval (fourth or fifth) in these inner trichords to construct tonal backgrounds (technique of triads and perfect intervals).

Finney generally binds himself to the order of the pitch classes within each hexachord, with few exceptions. He discussed this with the present author at a personal

²It should be kept in mind that the interval vectors do not take the order of intervals into account. An interval vector simply represents a pitch-class set, which by definition is an unordered set.

interview (APPENDIX A, INTERVIEW). Because the order of the intervals is generally upheld in this particular work, a consideration of the interval content with regard to order becomes significant.³ Thus the row contains five minor seconds, two major seconds, no minor thirds, two major thirds, and two perfect fourths. The ratio of steps to skips is 7:4. The SSR (steps to skips ratio) is 1.75. If the row is then repeated in the same form, which it often is (technique of reiteration, see below), there is one more minor second, between the last note of the row and the first note of its reiteration. Thus, exactly half of the intervals involved are minor seconds, and two thirds of them are steps, i.e. major or minor seconds. The row now contains an SSR of 2.0. In contrast to this, the Dallapiccola row used in the Orchestral Variations has no steps at all (SSR = 0.0). The conjunct contour of the row has a visible and audible effect on the score, producing a predominance of step-wise motion in the melodies. Finney's propensity for lyricism and linear melodic contours finds its material in his choice of a row consisting mostly of steps.

It is significant that there are no tritones included in the row. The dissonance and instability of the tritone

³The interval vector of a twelve-tone row is insignificant because every row has the same vector (12 12 12 12 12 6). If the order of the tones is not considered, all twelve tone rows become identical.

are not embodied in the set of intervals Finney chose with his row, further confirming the fundamental tonality of the work.

A matrix for the row is found in Ex.5.4. This matrix

MATRIX FOR ROW I

The matrix displays the 12 rows and 12 columns of the matrix for Row I. The rows are labeled p0 through p11, and the columns are labeled R10 through R11. Each cell contains a musical note on a staff. The notes are: p0: C, D, E, F, G, A, B, C, D, E, F, G; p1: B, C, D, E, F, G, A, B, C, D, E, F; p3: A, B, C, D, E, F, G, A, B, C, D, E; p4: G, A, B, C, D, E, F, G, A, B, C, D; p9: F, G, A, B, C, D, E, F, G, A, B, C; p5: E, F, G, A, B, C, D, E, F, G, A, B; p6: D, E, F, G, A, B, C, D, E, F, G, A; p2: C, D, E, F, G, A, B, C, D, E, F, G; p7: B, C, D, E, F, G, A, B, C, D, E, F; p8: A, B, C, D, E, F, G, A, B, C, D, E; p10: G, A, B, C, D, E, F, G, A, B, C, D; p11: F, G, A, B, C, D, E, F, G, A, B, C.

Ex.5.4
Matrix for Row I

will be important for the discussion of both the large and the small means.

The Large Means

Finney intended to write tonal music, while using the row technique of the atonalists. The row he devised was instrumental in the development of five particular techniques which were implemented in providing a tonal basis for the Second Symphony. They are:

- 1) reiteration, using one form of the row more than once in succession,
- 2) prolongation, using long, repeated, or otherwise accentuated notes, especially in the bass,
- 3) leading tones, from above as well as below to emphasize the arrival of certain pitches,
- 4) metric confirmation of more important pitches as down beats and
- 5) triads and perfect intervals in background harmonies, formed by using the middle tetrachord or middle trichords (Ex.5.3C) which contain, respectively, triads and perfect intervals.

The first measures of the Second Symphony (Ex.5.5) clearly exhibit four of these techniques. The P0 form of the row is reiterated five times, beginning each time with pitch-class A. This contributes significantly to the establishment of A as the tonal center. Because of the reiteration, the last pitch of the row, B flat, acts as an upper leading tone, which further confirms A as the tonal center. The very first note of the work, an A, is lengthened by use of the tie, making it stand out, (technique of prolongation). The pitch-class A is also confirmed metrically as the first note of the measure in measures 1, 3, 5, 8, and 10.

Woodwinds
Violins

Brass *ff*

English Horn
Viola
Cello

Tuba & Double Bass

measures 1-13

Ex.5.5
Second Symphony, First Movement, measures 1-13

The row employed for the initial background chords (Ex.5.6) also P0 (on A), further reinforces A as the tonal center for the beginning of the piece.

measures 12-13

P0

first seven notes of P0

first hexachord of P5

Ex.5.6
Second Symphony, First Movement, measures 1-3

This emphasis on A as a tonal center is disguised in measures 2 and 3 by the sustained (prolongated) F in bass trombone and timpani. The tone F will subsequently (in section C) become an important tonal center.

The importance of the pitch-class A for section A is further confirmed by prolongation of A and C sharp, respectively, in measures 29 and 30 (Ex. 5.7). This

minor 3ds found nowhere in Row I.

cello and double bass

Row II once in the first movement

0 1 2 3 4 5 6 7 8 9 10 11

half-step to A

violins

six chromatic tones in succession not found in rows

minor 3d

two whole steps in succession not found in any of the series forms

Ex.5.7
Second Symphony, First Movement, measures 27-33

particular A (measure 29) is approached from below by a half-step from G-sharp (technique of leading tones). These central pitches occur each time on down beats (technique of metric confirmation). Unusual in this passage is the occurrence of melodic minor thirds (measure 30), though they do not exist in the row itself.

When the A theme returns at measure 210, it is preceded by a strong A flat in the brass (enharmonic G sharp). This acts as a leading-tone, accentuating A as the tonal center.

The return of the A section is quite literal and undisguised. However, it will not be considered as a recapitulation, *per se*, because the movement is not in Sonata-Allegro form, but has an arch or palindromic form.

Section B begins on D-flat in measure 42 (Ex.5.8). The

Undisguised C sharp minor sonority comes from middle tetrachord of p1

prolongated A

prolongated A descends by half-step to A flat

Ex.5.8

Second Symphony, First Movement, measures 42-64

tone A remains important, but now, because it is an upper leading tone to A-flat, which is the tonal center for this section. Finney brings out this A-flat by repetitively employing the series-form P11 (reiteration), which begins on A flat. The sustained A in measures 55-61 (Ex.5.8) gains intensity through the octave leaps, and through repetition (further use of prolongation technique). This emphasis on the upper leading tone A functions much like the emphasis on

the dominant did for composers of the common practice era. There is a sense of arrival, and of release, when the A descends by a half-step to A flat in measure 61. The critical pitches in this melody (D flat in measure 42, A natural in measure 54, and A flat in measure 61) are each on down beats, displaying metric confirmation. Section B begins with an undisguised C sharp minor sonority (Ex.5.8) using the tones of the middle tetrachord of P1 (technique of triads and perfect intervals).

The same techniques of reiteration, prolongation, leading tones, metric confirmation and triads/perfect intervals are used to establish F as the tonal center for the C section. For example, the long bass notes in measures 77-79 (Ex.5.9A) are approached each time by a half-step from below (leading tones). These notes fall on down-beats (metric confirmation). The passage is full of altered F-major seventh chords in the horns. The triads and perfect intervals for these chords are taken from the inner tetrachords and trichords of the row (Ex.5.9B).

Further on in this same section (Ex.5.9B), in measures 89-92, is a striking example of Finney employing the double leading tone (i.e.: the semi-tone approach from above and below). The E in measure 89 ascends to F in measure 90 and the G flat in measure 91 descends to F in measure 92. The significance of these pitches in the tonal scheme is underlined by their repetition and length, both of which prolongate those particular pitches.

A

76 78

Horns
F major triad
with F sharp
in the bass.

ascending half-step
strengthens F as tonal center

Celli

79 80 13 7 8 9 10 11

mf Oboes and violas

cellos and bassoons

Incomplete triad on C functions like V
strengthening F as tonal center.

Second Symphony, first movement, measures 89-92

89 90 91 92

B

ascending half-step to F

descending half-step to F!

piano, cello
basses

Ex.5.9
Second Symphony, First Movement,
measures 72-81, and 89-92

Another way in which Finney establishes F as the tonal center for this section is the use of chords, built on C, which function like dominant chords as in measures 80 and 81 (Ex.5.9A). This dominant-tonic idea is again clearly exhibited in measures 94-97 (Ex.5.10), where a sustained C sounds in the bassoons, cellos, and basses, followed by a unison F in bass clarinet, and violas, which is likewise sustained (technique of prolongation).

93 94 violas and bass clarinet 96 97

Basses and bassoons

clarinets

Ex. 5-10
Second Symphony, First Movement, measures 93-97

The D1 section (measures 101-126) is developmental in nature. There is no one pitch class which could be called a tonal center. As will be discussed below under Small Means, there is little employment in D1 of the row in its entirety in any of its series forms. Each partial use of the row, involving mostly tetrachords and trichords, is in a different series form, i.e. without reiteration. For example, in the first 12 measures of the A section, P0 is utilized, in its entirety, five times. By comparison, in D1 Finney makes use of series forms P5, P3, P10, P3, P7, P11, each incomplete and stated only once. Thus the tonal center of the D1 section, marked *Allegro teneramente*, is more ambiguous than in the other sections.⁴

Whereas complete statements of the row are avoided in D1, in the next section, D2, the row is employed many times as a whole. Example 5.11 shows each of these statements as

⁴This parallels the tonal excursions of a development section in music of the Classical or Romantic era, where no one key prevails for long, until the dominant is reached as preparation for the return of the tonic.

D 2 127 131 135 145 150 153

Prolongated D sharp will eventually descend to D providing tension and release

D approached from above by half-step

prolongated D

D is tone 11 in P4 and tone 0 of P5!

Ex. 5.11

Second Symphony, First Movement, measures 127-157

a complete series form (P5, P4, I4, etc.), notating the first pitch of each of these statements. The tone D, which is the first pitch of P5, is consistently surrounded by either C sharp (first pitch in I4, p4) or E flat (first pitch in P6). The consistency with which Finney approaches P5 from P6, I4 and P4 can only be understood as a further, albeit more sophisticated, use of the double leading tone, from above and below. The pitch class D does not actually become the tonal center of section D2, but its predominant

role in the following section (C2) is prepared. The notes of the bass in section D2 (Ex.5.11) also lead to D, which is confirmed in measure 151 as the final destination of the chromatic wandering. The prolongation of the D-sharp (measure 138-145) is consistent with Finney's habit of emphasizing the upper leading tone at crucial junctures in the structure of the piece. The motion down to D represents the same release of tension which is felt, when the dominant proceeds to the tonic in music of the common practice period. The strongly sounded bass D in measure 154 (Ex.5.11), in the bassoons, bass clarinet, and low strings exhibits metric confirmation of the pitch-class D to close section D2.

Section C2 begins tonally centered on D (Ex.5.11, measures 154-157). As has been pointed out, this was strongly developed and prepared in section D2. Finney further employs the technique of prolongation, this time in the tonally crucial bass line, to establish first D, then B flat (measures 170-175) as tonal centers for this section. The C2 section retains the rhythmic drive of C1, and much of the tonal material is the same. The emphasis on the tone F in the upper voices remains, but the prolonged bass notes, already mentioned, on D and then B flat had not been present in the C1 section (these three pitches make up the B flat major triad).

Section B2, in measures 190-209 (Ex.5.12, 5.13) is not as similar to B1 as C2 was to C1, or A2 will be to A1. The



Ex.5.12
Second Symphony, First Movement, measures 190-192

Ex.5.13
Second Symphony, First Movement, measures 200-209

accented, syncopated descending half step motive in measure 102 (Ex.5.8) is recalled in B2, this time as a half step in measure 190 (Ex.5.12). Finney's use of this motive at this point, accentuated in the horns, begins to establish the

predominance of A as the tonal center. There is some tonal ambiguity throughout the B2 section, with tension between the pitch classes G sharp and A. This tension is resolved at the dramatic return of the pitch A as tonal center in measure 210 (Ex.5.13).

Measures 207, 208, and especially 209 (Ex.5.13) each contain a predominance of the pitch class A flat. Measure 209 sounds a unison A-flat in the brass, with all competition from other pitch classes having ceased. This acts as the leading tone to the dramatic return of the first theme now called A2, in measure 210. This is an exact return of the first measures of the piece, with A as the tonal center, established in the same way it was at the beginning.

Reiteration of the row in certain series forms, prolonged bass notes, leading tones (especially upper leading tones), metric confirmation and triadic chords with perfect intervals are techniques used by Finney to establish tonal centers in this piece.

Small Means: Minutiae of Pitch

The first movement begins with a bold unison statement of the first motive (Ex.5.5), which is reiterated five times, twice in two measure phrases, once in an expanded three measure phrase, and then again in two phrases of two measures each. In each of these phrases the form P0 is employed. This open, undisguised use of the row is an

example of Finney's transparent American approach, which is apparent throughout the score⁵.

An example of Finney's inclination toward flexibility as a dodecaphonist is found in measures 6, 7 and 10 (Ex.5.5), where the notes of the row are repeated--not just D followed by C sharp, but D-C#-D-C#-D. Thus they act as prolongators. This is not an isolated phenomenon in the score but a consistent practice. The descending pattern of the row is reflected in the repetitions of the row as the orchestra gradually descends from the highest register, in the first measures, to the lowest notes sounded by the lowest instruments in measures 8-12.

The A theme, which is simply P0, contains eight steps and four skips or an SSR of 2.0. This is true of every complete reiteration of the row (either 2.0 or 1.75 depending on whether there is reiteration).

The next passage, measures 14-17 (Ex.5.14), again



Ex.5.14
Second Symphony, First Movement, measures 14-17

displays Finney's use of reiteration to establish the first four notes of the row as thematic before employing all

⁵This very transparency is one of the qualities of Finney's work which makes it well suited for use in the college theory classroom.

twelve tones. Like the first notes of a fugue, they become unforgettable with repetition⁶. All the motion in the first 13 measures of the piece is descending. The ascending motion of measures 14-17 provides contrast to the first measures of the piece.

Most of the melodic material is made up of either entire statements of the row, complete hexachords or complete tetrachords. However, measures 22-26 (Ex.5.15)

Ex.5.15

Second Symphony, First Movement, measures 22-27

represent an exception. Finney begins a statement of the first motive in the bassoon and cello employing the first four tones (Ab, G, F, and E) of P11. The cello completes the statement, but the bassoon must wait until measure 26 to complete the row. The bassoon makes one aborted attempt to continue on P5, tones 3-8 (no tone 9). The viola begins in measure 23 sounding tones 3-8 of P1 (again no ninth tone),

⁶Row II used in the middle movements also contains this tetrachord (tones 1,2,3,4), and Finney employs it regularly, contributing to the unity of the piece.

followed by an attempt in the clarinet in P5 (measure 25). Finally, in measure 26, the bassoon completes the row P11. The six notes which Finney chooses here are not taken from one of the two hexachords (Ex.5.3A), but rather tones 3 through 8 of the inner two trichords (Ex.5.3C). The contrast between this section and the preceding one is accomplished largely through the use of a much lower SSR. There is but one step and either four or five skips, depending on whether one counts the interval to the first note of the next group. In any case the SSR is well below 1.0 at either 0.25 or 0.20.

In measure 27 (Ex.5.16), Finney begins to digress from

27

30

minor thirds found nowhere in rows

five chromatic tones in succession

cello and double bass

violas

half-step to A

six chromatic tones in succession nowhere in rows

32

minor 3d

two whole steps in succession not found in any of the series forms

Ex.5-16
Second Symphony, First Movement, measures 27-33

complete statements of the row, linking smaller segments together to construct a six measure ascending sweep, using

steps almost exclusively. The employment of the minor third at the entrance of the cellos and basses (measure 27), at the entrance of the viola (measure 29) and again, repeatedly, in the violins (measures 30-31) is noteworthy, because none of the series forms contain a minor third. One other aspect of this section which is worth mentioning is the use of chromatic notes successively, from the C sharp in measure 27 to the F sharp in measure 28. This kind of chromaticism does not, of course, exist in the row, not even when the first tetrachord is placed immediately after the third (Ex.5.3B).

The motivic material of the B section of the first movement is expressed in the low strings (Ex.5.17, measures

P11 42 8 9 10 11 p11 0

mf f

47 1 2 3 4 50 5 6 7 8 9 10 54 11

prolongated A

57 61 descending half-step to A flat

prolongated A descends by half-step to A flat

Ex.5.17

Second Symphony, First Movement, measures 42-64

42-49). After sounding this descending motive, these instruments carry a line through the entire B section (Ex.5.18), which makes extensive use of the series form P11, reiterated each time in its entirety. The tones chosen for the main motive of the B section represent another example

76

ascending half step strengthens F as tonal center

Horns
F major triad
with F sharp
in the bass.

78

Celli

79

80 13 4 81 10 11

mf Oboes and violas

cellos and basses

Incomplete triad on C functions like V strengthening F as tonal center.

Ex.5.18
Second Symphony, First Movement, measures 72-81

of Finney manipulating the row in such a way that there are no skips at all but only steps. This represents an SSR of 12.0.

Section C Of the first movement (Ex.5.18) is marked by many repeated notes, and repeated chords (altered major chords). The row, when reiterated (measures 80 and 81) as a melody in its entirety, has an SSR of 1.75. The lack of a melodic motive in step-wise motion in this passage represents a strong contrast to the other sections of the movement.

It has already been noted that the D1 section is marked by incomplete reiterations of the row. The main theme of this section (Ex 5.19) is of interest, because it is almost purely chromatic. There are now one skip and eight steps representing an SSR of 8.0.

Andante teneramente

101 104

flute clarinet

all chromatic motion one whole step all chromatic motion

Ex.5.19

Second Symphony, First Movement, measures 101-105

Section D2 by contrast is marked by complete reiterations of the row, almost exclusively in eighth note patterns (Ex.5.20). Some of the half steps are repeated (measures 128 and 133), as is the perfect fourth (measure 136). The row is always completed. It is reiterated 4 times on C sharp (I4) in measures 138-133, preparing C sharp to be a leading tone for the D in measure 154, where section C22 begins. In this passage, there are 57 steps and 21 skips representing an SSR of 2.62, almost 50% higher than the SSR of the row itself (SSR = 1.75).

Sections C2, B2, and A2 are sufficiently similar in their treatment of the small means to sections C, B and A respectively, that further discussion is unnecessary.

*In the matter of the small means, or minutiae of pitch in the first movement of his Second Symphony, Finney remains consistent in his use of the row. His tonal aspirations are, of course, more clearly expressed in his treatment of the large means than the small.

Ex.5.20
Second Symphony, First Movement, measures 127-137

The fruits of Finney's long thoughts included the clarification of the two ideas that would remain vital elements of his work: that the small means (the factors of fabric) and the large means (the factors of form) are not the same; and that

⁷In a personal interview with the present author (APPENDIX A, INTERVIEW), Finney questioned Boroff's understanding of his use of complementarity.

pulls and counterpulls could be savored, structured, and used in composition; this important principle he called complementarity. (p.110)

Indeed, Finney has always been very clear about the small means not being the tonal element in this work (APPENDIX A, INTERVIEW).

Finney's manipulation of the row to produce motives and melodies which, with a few exceptions, represent a higher SSR than the row itself, confirm his predilection for step-wise motion, for linear, conjunct melodic material.

The first movement of Finney's Second Symphony clearly displays the composer's intention to be a dodecaphonic tonalist. It is the present author's opinion that this is apparent not only in the large means, where Finney intended it to be, but also in the small means, particularly in the construction of the row.

Analysis: The Second Movement

Form

The form of the second movement, in keeping with Finney's attraction to the symmetrical, is a three-part song form. The initial section, (measures 1-23) is marked *Adagio con moto*, and will be considered section A. Section B (measures 23- 50), is marked *Piu animato*. Measure 50, the undisguised return of A, is marked *Tempo primo*. This return of A will be considered A1, and is somewhat truncated, consisting of 15 measures.

Thus, the form can be described:

A B A1

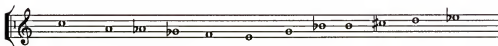
The Row

The row Finney chose for the second movement deserves attention, both in the initial form Finney employs (Ex.5.21,



Ex.5.21
Row II

Row II) as well as in its permutation, where the order of the second hexachord is reversed (Ex.5.22, Row IIA). Each of



Ex. 5.22
Row IIA

these rows is made up of 7 half steps, 2 whole steps and two minor thirds. This represents a high steps to skips ratio (9:2 SSR= 4.5, or 9:3 SSR=3.0 when there is reiteration)⁸. The high SSR describes the high frequency of steps involved. It does not distinguish between half and whole steps, which are found in a ratio of 7:2. The chromatic characteristic

⁸When the row is reiterated, there is a skip, not a step, between the reiterations. This yields a slightly lower SSR of 9:3 or 3.0 for either version of Row II.

of the row flavors the entire movement. Row II, and Row IIA have many similarities with Row I. One of these similarities is symmetry. Like the hexachords in Row I, the two hexachords (Ex.5.23A) of Row II are mirrors; the order m3, m2, M2, m2, m2 is found in the first hexachord of Row II and in the inversion of the second hexachord. The two hexachords each have the same interval vector. Each of the two hexachords of Row II and Row IIA contains the outline of an augmented triad (C-Ab-E, and Eb-B-G).

When the row is divided into tetrachords (Ex.5.23B and E), Row II again exhibits symmetry typical for Finney's work. The outer tetrachords are intervallic mirrors, and they each contain the same interval vector. Where the middle tetrachord of Row I contained a major/minor triad, each of the outer tetrachords of Row II outlines a diminished triad. The middle tetrachord includes the tones of the diminished triad in order. This will become a predominant harmonic color in the movement, being employed in background harmonies.

The trichords (Ex.5.23C and F) of the row are each no larger in range than a major 3d. In Row II symmetry is again expressed by each of the outer (first and fourth) and inner (second and third) tetrachords having respectively the same intervals, mirroring one another. The inner trichords are chromatic.

Row I (Ex.5.2, first movement) exhibits a generally descending contour. Nine out of the eleven tones are below

Dividing Row II into Hexachords

A

first hexachord second hexachord

interval vector (333421)

0 1 2 3 4 5 6 7 8 9 10 11

Dividing Row II into Tetrachords

B

first tetrachord second tetrachord third tetrachord

interval vector (112101)

0 1 2 3 4 5 6 7 8 9 10 11

Dividing Row II into Trichords

C

first trichord second trichord third trichord fourth trichord

interval vector (101100)

0 1 2 3 4 5 6 7 8 9 10 11

Dividing Row IIA into Hexachords

D

first hexachord second hexachord

interval vector (333231)

0 1 2 3 4 5 6 7 8 9 10 11

Dividing Row IIA into Tetrachords

E

first tetrachord second tetrachord third tetrachord

interval vector (112101)

0 1 2 3 4 5 6 7 8 9 10 11

Dividing Row IIA into Trichords

F

first trichord second trichord third trichord fourth trichord

interval vector (101100)

0 1 2 3 4 5 6 7 8 9 10 11

Ex.5.23
Divisions of Row II

their directly preceding neighbor. Row II (Ex.5.24, 5.25) contains a uni-directional flow which is even more pronounced. All of the eleven intervals in P0 are descending. Of course in serial music the descending order of the tones will become ascending in the retrograde and

MATRIX FOR ROW II

10 19 18 16 15 14 13 12 11 11 110 17

P0 R0
P3 R3
P4 R4
P6 R6
P7 R7
P8 R8
P9 R9
P10 R10
P11 R11
P1 R1
P2 R2
P5 R5

R10 R19 R18 R16 R15 R14 R13 R12 R11 111 R110 R17

Ex.5.24
Matrix for Row II

inversions of the row. Finney inverts the intervals from time to time but maintains the linear motion by inverting only one interval in the row.

The SSR of Row II is higher than that of Row I. This further confirms Finney's attraction to step-wise motion.

MATRIX FOR ROW IIA

The matrix displays 12 rows (P0 to P11) and 12 columns (R0 to R11). Each cell contains a musical note on a staff. The notes are organized in a grid where each row and column contains a unique set of notes, likely representing a 12-tone scale in a specific arrangement.

Ex.5.25
Matrix for Row IIA

The Large Means

Finney retains the same techniques in this movement as in the first. They are:

- 1) reiteration, using one form of the row more than once in succession,
- 2) prolongation, using long, repeated, or otherwise accentuated notes, especially in the bass,
- 3) leading tones, from above as well as below to emphasize the arrival of a certain tone,
- 4) metric confirmation of more important pitches as down beats and
- 5) triads and perfect intervals.

The last of these techniques (no.5), triads and perfect intervals, is somewhat altered in the predominance of diminished triads and a frequent exploitation of the tritone (outline of the outer tetrachords) instead of perfect intervals.

The main theme of section A (Ex.5.26), a staccato line

Adagio con moto

C-G-E prolonged triad
spells a C major triad

C is prolonged and metrically confirmed

P0 begins when R17 is in progress
provides 4ths and 3ds.

E minor sound
approached from above
by step (F)-leading tone
technique.

The musical notation consists of two staves. The first staff shows measures 1 through 11, with a 'C' note prolonged in measure 1. The second staff shows measures 7 through 11, with a 'P0' (pedal point) on the bass line and a 'C' note in measure 10. Annotations include 'Adagio con moto', 'C-G-E prolonged triad spells a C major triad', 'C is prolonged and metrically confirmed', 'P0 begins when R17 is in progress provides 4ths and 3ds.', and 'E minor sound approached from above by step (F)-leading tone technique.'.

Ex.5.26

Second Symphony, Second Movement, measures 1-4

in the low reeds, contains all the notes of the row. The technique of prolongation is not used as emphatically as in the initial measures of the first movement, but does come into play at the entrance of the second bassoon and third and fourth horns in measure 3 to emphasize pitch class C.

The techniques of prolongation and metric confirmation are utilized in the first two measures to outline a C major chord. There is a sense of arrival and cadence in measure 4, with its E minor sound. This is emphasized and confirmed by the use of upper leading tone F descending to E in that measure.

The fourths and thirds in measures 3 and 4 are formed by having two forms of the row juxtaposed upon each other, in this case P0 and RI7. This is an elaboration upon the technique of triads and perfect intervals. These particular triadic thirds and fourths do not come from the tetrachords but from the juxtaposition of rows.

The choice of pitches for measures 5 and 6 (Ex.5.27)

5 notes not found in any series form

leading tone G to G#

Tones 1,2,3,4, of P5 (no 0)

E flat major triad

A minor triad

F# diminished triad

diminished triad

6 chromatic notes in succession

Ex.5.27

Second Symphony, Second Movement, measures 5-9

represents an occasion where Finney moves away from the row entirely (Bb-G-Eb-Ab-F-F#-A-C). One initially suspects the introduction of a new row, but the sequence does not occur again in the piece. The last notes, F#-A-C, form a

diminished triad and the C is the first note of a complete statement of P0, but the other 4 notes are truly from nowhere in any of the series forms of the row. The four note motive, D-C#-B-Bb, which precedes these, represents the first four notes of Row I, from the first movement. It is found in Row II in this order, and often employed as a motive. This is one of the ways in which Finney unites the entire symphony.

In measures 6-9, Finney manipulates the row to produce triads in the melody. In measure 9, he writes six chromatic notes in a row. This will be further discussed under Small Means, below.

The end of section A is marked by a cadence on F (Ex.5.28, measure 17) which, is preceded by the double

chromatic trichord

Celli

Horns 1 2 3

Basses

ROW IIA P5 4 5 6 7

16 17

F minor cadence

Double leading tone

P10 without first note (Bb)

Reminiscent of Row I first tetrachord

half step piccolo

18 19 20 21

P10 1 2 3 4

IIP5 5 6 7 8 9 10 11

(tones 0-4 are missing)

piano, trumpet, xylophone

Ex.5.28

Second Symphony, Second Movement, measures 16-22

leading tone E and F sharp. This cadential idea not only closes section A but introduces F as the initial key center

for the B section. F is further confirmed at this point by the use of P5 of Row II, which begins on F. Measure 19 contains an interesting example of Finney's excluding the first tone of the series, using the row beginning on the second tone. This creates a motive which is identical with the first tetrachord of Row I from the first movement.

The pulse throughout the B section of the second movement is faster than the A section, and the background rhythm is, with exception of the F octave eighth note motive, triplets. This change in the background rhythm represents a marked contrast and is undisguised, coinciding architecturally with the new section (B). Finney designs the symmetry of the movement to be audible to the listener.

The technique of reiteration is more predominant in this section than in the one preceding, with the series form P4 of Row IIA being employed 3 times in the first seven measures (Ex.5.29). The initial tone of P4 is E, and the entire section represents E vying with F for predominance.

The tone F is repeated throughout the section in octaves, a motive which was introduced at the end of the A section. This is prolongation, working to force the pitch F into the foreground.

The fact that two competing tonal centers are a half step apart is another example of Finney using leading tones to give weight to certain pitches.

In the discussion of Row II and Row IIA, it was pointed out that the inner tetrachord of either of these rows

Ex. 5.29
Second Symphony, Second Movement, measures 23-29

contained a diminished triad. This diminished sound is the main harmonic color of the entire B section (Ex.5.29, measures 24,26,29, etc.). The various pitches of this triad (F, Ab, and B) are metrically confirmed in measures 23 and 24.

Beginning in measure 27 (Ex.5.29) and again in measure 30, the series form I7 comes into the picture. The initial tone of I7 is also E, like P4.

The tension between E and F as tonal centers for this section is culminated in measures 35 and 36 (Ex.5.30), which is the climax of the movement. The fortissimo chords built on the bass note F in measure 35 are answered fortississimo in measure 36 with chords built on E in the brass. Measure 35 contains four pitches, each separated by a whole step (Eb, F, G A). These pitches come from outside any series form, and represent the kind of exception Finney insisted

Cluster of whole steps
from outside the row

R17

35 5 36 37 2 3

ff Double leading tones
E flat and F lead to -----E *fff*
woodwinds and strings brass

Ex. 5.30

Finney uses prolongation in the repetition of the chords in these climactic measures (Ex.5.30). The technique of leading tones is found in the F of measure 35 leading compellingly to the E in measure 36. Metric confirmation on the downbeats of these measures is also utilized.

Measures 39-50 (Ex.31) act as a bridge back to the A section. The repeated F motive maintains an active role as does the series form P5 which begins on F (Ex.5.31, measures 40-45, 42 -43, and 48-49). The other series forms utilized

39 40 Row II R0 First hexachord 42 4 5

Row II P5 2 3 4 5 6

repeated F motive (technique of prolongation)

44 45 46 P0 0 2 1 47 2 3 4 5 6 7

8 9 P0 0 10 11

This chord is made up of the first hexachord of I0, whose first note is C (C, D#, E, F#, G, Ab)

4 whole steps not in any series form possible mistake—Eb should be D

48 8 9 10 11 49 50 Return of section A

07 12 2 3 4 5 6 7 8 9 10 11 P0 0 1 2 3 5 6

Ab major minor seventh over a G pedal (first hexachord of I0 with no E ♯)

Ex.5.31

Second Symphony, Second Movement, measures 39-50

in this section are R0, first hexachord (measures 41-44), the first hexachord of I0, (measures 46 and 49), and P0, first hexachord, in measure 45, the row in its entirety (in measures 46-48) which finally reasserts the predominance of the tonal center C at the return of the A section in measure 50. The repeated use of a limited number of series forms in this section is another example of the technique of reiteration.

Through prolongation, especially of bass notes, Finney sets up the return of the A section in a traditionally tonal way (Ex.5.32). The G, which is brought out in measure 46



Ex.5.32
Cadential Formula

(sounds like a tonic triad in second inversion), is approached both from above (Ab in measure 40-41, and from below (F sharp in measure 43) by half step. This is the technique of leading tones to establish tonal centers.

Measure 48 contains four whole steps in a row. This could be a reflection of the whole steps in measure 35, or it could be a mistake. If the E flat were a D, a complete reiteration of P5 would be found. The latter would be the suggestion of the present writer. The pitch D at this point would be more consistent with Finney's style.

Metric confirmation is a technique which Finney studiously avoids in this transitional passage. All chords here land off the beat, until measure 49, where the arrival on C is underlined by the fact that it is on a down beat.

The use of major triads is found in measures 46-47 and in measure 50. These sound, respectively, like a second inversion C major chord, and an Ab major minor/major seventh chord in third inversion.

Section A1 is shorter than the A section. The tonal center of C is not departed from, and it is asserted through all of the techniques employed in section A.

Measures 54-56 (Ex.5.33) represent a passage where

Finney manipulates the I0 series form through canonic imitation to form triads. The resulting progression of Bb minor to G major is immediately repeated in the trumpets (measures 57-59) likewise over a C pedal.



movement. The row displays a uni-directional contour, either up or down, depending on which series form is implemented. By use of different series forms, the arched contour is also found. For example, the contour in the first measure (Ex.5.35) descends, in the second measure it

Adagio con moto

C-G-E prolonged spell C major triad

P0 begins when R17 is in progress provides 4ths and 3ds.

Horns

C is prolonged and metrically confirmed

E minor sound approached from above by step (F)-leading tone technique.

P0 0 1 2 3 4 5 6 7 8 9 10 R17

Ex.5.35
Second Symphony, Second Movement, measures 1-4

ascends. The third measure contains an arch, up, then down. In the B section (Ex.5.36, measures 23-29) the line descends for one measure, remains in place for a measure, then

F held over from Section A

F leads to E of P4, F, Ab, and B are metrically confirmed

diminished triad

Repeated F = prologation

diminished sound on F persists

E of P4

Reiteration (P4)

F diminished triad over G

reiteration P4

23 24 25 26 27 28 29 11

Ex.5.36
Second Symphony, Second Movement, measures 23-29

descends again. The B section contains many measures of non linear, rhythmic measures, which neither descend nor ascend

(measures 34-39). The section ends with a long descending cadenza in the clarinet leading to the return of A at measure 50.

There is virtually no disjunct melodic motion in this movement. Where there is melodic motion it is conjunct. The tendency for all the notes in any given measure to either descend or ascend is striking and consistent throughout the movement.

Analysis: The Third Movement

Form

The third movement, marked *Allegro scherzando*, is in modified Sonata-allegro form. The A section, measures 1-21 (Ex. 5.37), is constructed out of the four note motive which is found in both Row I and Row II (Ex. 5.38). A contrasting



Ex.5.38
Four Note Motive found in Both Rows

passage, measures 21-25 (Ex. 5.39), which is melodically disjunct, serves as a bridge to section B, measures 26-43 (Ex.5.39). The extended development section (measures 44-149) includes a new motive, with repeated eighth notes (measures 44-48, Ex.5.40), and motives from both the A and the B section. The recapitulation in measure 150 is very similar to the exposition. The A2 section extending from

First measure of the movement is repeated to end section A

Ex.5.37
Second Symphony, Third Movement, measures 1-20

Ex.5.40
Second Symphony, Third Movement, measures 43-46

measures 150 to measure 169. The same four measure bridge is implemented to lead into section B2. The B2 section is

metric confirmation
P0

21 P0 0 Prolongation

diminished triads

26 7 8 7 8 9 8 19 major triad and diminished triad

P5 0 1 2 3 4 5 6 7 8 9 10 (C 1s 11)

31 4 5 6 5 6 7 8 9 8 9 8 10 11 P1 0

35 P6 0

Prolongation

40 Prolongation

7 8 7 8 9 8 9 10 11 P1 1 2 3 4 5 6 7 8 9 10 11

Ex.5.39

Second Symphony, Third Movement, measures 21-42

somewhat abbreviated to the end of the movement in measure 195.

Thus, the form of the third movement can be described (Ex.5.41):

1-20	25-43	44-149 (with new motive)	150-169	174-195
A1 Bridge	B1	Development	A2	Bridge B2

Ex.5.41

Second Symphony, Third Movement, form

Finney uses Row II in the third movement of Symphony No.2. In the fourth movement he returns to Row I. This is another example of his affinity to the symmetrical. The

first and last movements utilize Row I, and the inner movements use Row II.

Large means

Finney establishes tonality in the large means of the third movement through the same techniques implemented in the first two movements. The C in the cello (Ex. 5.37) at the outset is the pitch center, and the E and Ab above it provide an augmented triad sound. The B section maintains the C but inserts an A below it, which becomes a diminished triad A-C-Eb in measure 31 (Ex.5.39). In the second part of the B section D flat becomes the tonal center.⁹ This D flat is repeated for four measures, which embodies the technique of prolongation. The half step between C and D-flat represents the technique of leading tones. The diminished triads in these measures are further examples of Finney exploiting the inner trichords of the row to form triads. This further contributes to the tonality of the movement. All of the passages discussed, the C at the outset, the A-C minor third in measure 25 and the D-flat in measure 31 are further examples of Finney's use of metric confirmation.

⁹The second beat of measure 34 and the first beat of measure 35 seem to contain an error in the bass part, which ascends to E-flat for those two beats. The piano, which is doubling the bass part, remains on the D-flat throughout, which is more in keeping with Finney's use of prolongation.

The new material introduced in the development section is by its repetitive nature an example of prolongation (Ex.5.42). Of the 106 measures in the development section, 29 of them contain this repeated eighth note, harmonically stagnant figure found in measures 107-108.

The musical score for Ex. 5.42 shows measures 104 through 108. The top staff is for Trumpets and Trombones, and the bottom staff is for Strings. The key signature has one sharp (F#). In measure 104, the strings play a half note G4. In measure 105, the strings play a half note A4. In measure 106, the strings play a half note B4. In measure 107, the strings play a half note C5. In measure 108, the strings play a half note D5. The figure is repeated in measures 107-108.

Ex.5.42

Second Symphony, Third Movement, measures 104-108

The recapitulation is in measure 150, preceded by a grand pause. This is a dramatic example of metric confirmation. The recapitulation is literal for eight measures.

The very last measures of the movement (Ex.5.43) provide a lucid example of Finney's double leading tone technique. This, combined with the minor third motive, repeated many times on G and B flat, ends the movement conclusively in the key of G minor.

Clarinet

189

Bassoon

G flat from below G
Double Leading tones to G

190

Contra bassoon

A flat from above G

191

93

194

Timpani
and Double Bass

Ex.5.43

Second Symphony, Third Movement, measures 188-195

Small means

The melodic material of the third movement, the minutiae of pitch, is again dictated by Row II. Because the row is linear, indeed even chromatic, the melodic contour is linear. Hence, most of the melodies in this movement have same SSR as Row II (SSR=2.0). The same general contours are established in the third movement as in the second. As already mentioned, Finney exploits the minor third of the row (tone 0 and 1, tones 10 and 11), in the B section

29

30

31

Ex.5.44

Second Symphony, Third Movement, measures 29-31

(Ex.5.44). This motive is often repeated in the development section.

At the end of both the A section and the A1 section, there is a passage which includes disjunct motion (Ex.5.45).



Ex. 5.45

Second Symphony, Third Movement, measures 22-24

This is a chordal passage, stagnant in its harmonic motion.

The third movement, because it uses the same row, exhibits many of the same melodic characteristics as the second. However, there is a larger portion of harmonically and melodically stagnant measures in the third movement than in the second.

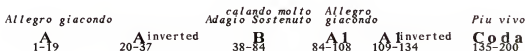
Analysis: The Fourth Movement

Form

The form of the fourth movement can be described as a three part song form with coda, where the B section is more developmental than expositional. There is an extended coda, with new material. Finney's characteristic affinity to the symmetrical is again evident in the choice of this particular form. Measures 1-19 represent the A section, followed in measures 20-38 by the same idea in inversion. Measures 38-84 are developmental, and will be called section B. Measures 85 through 135 are A1. As in section A, A1 contains two versions of the theme, one the inversion of the

other. The coda extends from measure 140 to the end of the piece at measure 200, and is marked *piu vivo*.

Thus the form of the fourth movement can be described (Ex.5.46) :



Ex.5.46
Second Symphony, Fourth Movement, Form

The Row

The last movement of Finney's Symphony No.2 utilizes the same row as the first movement. Finney's treatment of Row I varies considerably between these two movements. This is discussed below under small means.

The Large Means

The melodic material of the A section can be divided into four basic motives, two of which stem from Finney's technique of perfect intervals from the inner trichords to achieve pitch polarity, or tonality. This necessitates the inclusion of some discussion of the small means first in the present analysis of the large means.

The A section (Ex.5.47) contains two highly disjunct and dissonant melodies using tones 0-6 (measures 1-6) and tones 7-11 (measures 11-15). Measure 6 contains an eighth note quartal motive which exploits the perfect fourth

between tones 3 and 4 in the row. Measures 8 and 9 contain a second quartal motive, in quarter notes derived from those particular pitches. The entire section is accompanied by a half step undulation which functions more as filigree than as a motive.

The tonal center on A is reinforced through reiteration (measures 1 and 3) and metric confirmation. It is followed by a strong emphasis on A flat in both of the quartal motives. The A flat serves as a leading tone back to A in measures 17, 18 and 19.

In measures 21-37 (Ex.5.48), this idea is repeated

Pitch A, strengthened through reiteration of 0, 1, 2, 3 of R11

Perfect intervals and triads

D major

Horns

Ex. 5.48
Second Symphony, Fourth Movement, measures 1-20

in inversion, using the row R11. The eighth note quartal motive is absent, but the second quartal motive is more prevalent than in measures 1-19.

Finney's tonal intentions are nowhere better displayed than in the last four measures of the work (Ex.5.49). The repeated E, sounding in the low brass, woodwinds and timpani, in measures 197-199 resolves to A in the last measure. There is nothing more tonal than a V-I cadence at the end of a piece.

1 *violins*

disjunct motive from tones 0-6

4 half step flagellation which is more filligree than motive

7 *xylophone and woodwinds* *Horns* *tuba*

I-V-I motive second quartal motive

10 disjunct motive from tones 7-11

15

The strong A flat in measures 7-9 with the A sharp in measure 9 serve as double leading tones.

Ex. 5.47

Second Symphony, Fourth Movement, measures 1-20

The Small Means

The melody in the A section is, as has already been discussed, disjunct. The sevenths in this section are striking, as are the use of perfect fourths. The steps to skips ratio is 2:20 (SSR=0.2). This is by far the smallest

176 *cello, bassoon and clarinet* Row I R3 0 1 2 3 4 5 6 7 8 9 10 11 178 H3 1 0 2 180 2 3 4 5 8

Row I 1 R0 0 *double bass, tuba, timpani and contra bassoon*

181 9 10 11 Row I 1 0 2 3 4 5 2 3 4 5 2 3 4 5 6 7 8 9 10 11 8 9 10 11 8 9 10 11 8 9 10

186 Row I 11 2 3 4 5 2 3 4 5 2 3 4 5 6 7 8 9 10 11 2 3 4 5 6 7 8 9 10 11 R4 0 1 2 3 4

PS 0 1 2 3 4 5 6 7 8 9 10 11 12 3 4 5 6 7 8 9 10 11

8 9 10 11 8 9 10 11 8 9 10 11 4 5 6 7 8 9 10 11 2 3 4 5 6 7 8 9 10 11

The bass E is tone 8 of the ascending Row II and tone 7 of the Row I (R4) coming from above

this cluster is 0,1,2,3,4,5 of P0

Strings woodwinds and horns

Trombones, tuba, timpani, bassoons and clarinets V I

Ex.5.49

Second Symphony, Fourth Movement, measures 176-200
(final measures of the work)

ratio in any segment of the entire symphony.

The two motives Finney chooses for the coda (Ex.5.50) are both from Row I. The one predominant motive is comprised of the tones 2,3,4,5 from the row. The other is the one so often used in both the first and second movements, tones 0,1,2 and 3. The first motive contains 5 steps and 5 skips (SSR = 1.0). The second motive reflects a higher SSR with 9 steps and 3 skips (SSR=3.0).

[illegible]

Ex. 5.50
Second Symphony, Fourth Movement, coda

Finney brings in Row II at the very end of the piece in the bass (Ex.5.49, measure 176). At the same time there are running eighth notes above the bass using Row I in the forms R2, P3, R3, P3, P4, R4, R4, P5, R5, R4, P4, P5, and finally P0, which Finney considers the tonic.

Conclusion

Ross Lee Finney's Symphony No.2 contains a unique approach to using a dodecaphonic system concurrently with a tonal one. The development of different techniques, reiteration, prolongation, leading tones, metric confirmation and triads and perfect intervals, mark a highly personalized style. The consistent use of melodic material with a high steps to skips ratio reveals a lyricist at work, always concerned with line and contour in his melodies.

CHAPTER VI A COMPARISON OF THE FIRST AND SECOND SYMPHONIES

Introduction

This chapter is a comparison of Finney's first two symphonies. Although there is a stark contrast in style between the two works, there are also idiosyncrasies, peculiar to Finney's own style, found in both works.

The question of the large means, i.e. the sense of key or tonal centers will be addressed with a direct comparison of one symphony to the other. The question whether Symphony No.1 contains any of the harmonic techniques found in Symphony No.2, (reiteration, prolongation, leading tones, chords built on perfect intervals, and metric confirmation) will be addressed. Because the implementation of these techniques in the Second Symphony has been discussed in CHAPTER V, the discussion in this chapter will be limited to the First Symphony, which will be reviewed regarding any parallel uses of these techniques.

The question of the small means will likewise be addressed, utilizing such measures as the steps to skips ratio (SSR), and observations about the contours of the particular melodic lines. As in the question of the large

means, the First Symphony will be reviewed and compared to the Second Symphony.

The Large Means

Regarding the large means the most obvious link between the two works is Finney's ever present concern for tonality. He does not desert his self proclaimed identity, "I am a tonalist" (Finney, 1991), in order to incorporate the dodecaphonic system.

Finney's use of the technique of reiteration in Symphony No.2 sets his work apart from that of mainstream dodecaphonic composers like Schönberg. Repeating the row four, five and six times successively (Ex.5.5) (the essence of the technique of reiteration) was not part of the compositional technique of the Viennese school of Schönberg, Webern and Berg, nor among American dodecaphonists of the 50's. In the First Symphony there are repeated motives, but not more or less than would be expected in a post-Romantic tonal work. The technique of reiteration is, on the one hand, peculiar to Finney's dodecaphonic style, and on the other hand a link to common practice tonality.

The technique of prolongation, developed in the Second Symphony, is, like reiteration, specifically designed to deal with dodecaphony. However, in the First Symphony, the importance of crucial pitches in the tonal scheme is often increased by use of prolongation.

The very first melody of the First Symphony (Ex.6.1),



Ex. 6.1
First Symphony, Introduction, measures 1-7

sounded on the English horn, outlines respectively, the D minor and A minor triads. This is accomplished not only by arpeggiation, but also by allowing the triadic pitches to be longer than the passing and neighboring tones. This represents prolongation.

The beginning of the B section (Ex. 6.2) of the first



Ex. 6.2
First Symphony, First Movement, measures 76-81

movement is another example of Finney gravitating towards prolongation in his First Symphony. The key of A is highlighted by a long E followed by an even longer A in the low brass. The repeated chords in the trumpets exemplify further utilization of prolongation.

The use of this technique of prolongation continues on throughout the work. For example, the pentatonic theme at the beginning of the *Scherzo* (Ex. 6.3) contains a number of



Ex.6.3
First Symphony, Scherzo, measures 1-7

repetitions, respectively, of the pitches A, D (up a fourth from A), A, and D (down a fifth from A). This establishes and confirms D as the key for the movement.

The technique of leading tones is a mainstay of the tonal makeup of the First Symphony. Examples abound and were discussed at length in CHAPTER IV. The use of double leading tones is also characteristic of both works and represents one of the strongest parallels between them. The first theme of the first movement contains the notes of a major triad on the lowered second scale degree (Neapolitan 6th), a half step above the root (Ex.6.4). The root of the Neapolitan 6th, E



Ex.6.4
First Symphony, Dramatic Statement, measures 26-31

flat, descends half a step to D and the raised leading tone, C sharp in the dominant harmony, also ascends half a step to

D. Two leading tones make the motion towards D even more compelling than one.

The B section (measures 76-120) contains a passage (Ex.6.5) with a melody in F minor over a major-minor seventh chord a half step below on E (measure 86-88). A repetition of this idea is found in measures 111-112, with clarinets in F minor accompanied by horns in E major. This represents a visible and audible movement from an upper leading tone.



Ex.6.5

First Symphony, Dramatic Statement, measures 86-88

Another example of root movement by half steps is found in measures 107 and 108 (Ex.6.6), where the F sharp minor harmony gives way to an F major chord in the trumpets. This F major chord then accompanies a passage which clearly outlines an E minor triad, another half-step below.

A discussion of the use of the technique of leading tones in the Second Symphony is found in CHAPTER V. (See Ex.5.9B, and Ex.5.11 and discussions thereof).

The techniques of metric confirmation and of triads and perfect intervals are both integral components of the common practice period style. The style of the First Symphony is, of course, full of melodies which have metric pulse, and

The musical score is presented in two systems. The first system covers measures 107 to 111. It features three staves: the top staff for strings, the middle staff for trumpets, and the bottom staff for cellos and basses. The key signature is one sharp (F#). The time signature is 2/4. The second system shows the harmonic structure of the triads: F sharp minor, F major, and E minor.

Ex.6.6

First Symphony, Dramatic Statement, measures 107-111

accompaniments which land on downbeats. To discuss the triads in the First Symphony would be to discuss almost every note in the piece, hence unnecessary. The significant development is Finney's use of these techniques in the twelve-tone setting of the Second Symphony.

Small Means

The melodic content of both the First Symphony and the Second Symphony is highly conjunct. This has been analyzed in depth in CHAPTERS IV and V. Table 6.1 reflects the SSR values of the themes in these works.

Throughout both works Finney pays special attention to the contours of the melodies. This is a consistent stylistic characteristic in both symphonies. The linear,

conjunct melodic motion goes hand in hand with smooth melodic contours. This is consistent in both symphonies.

<u>Work</u>	<u>Section</u>	<u>SSR</u>
<u>First Symphony</u>	Introduction	2.75
	Dramatic Statement, A	2
	Dramatic Statement, B	10
	Elegy	2
	Scherzo, A	1.8
	Scherzo, B	6.75
	Scherzo, C	1.8
	Fanfare	2.5
	<u>Average</u>	<u>3.45</u>
<u>Second Symphony</u>	IA	2
	IB	12
	IC	1.75
	ID1	8
	ID2	1.75
	IIA	3
	IIB	6
	III	2
	IV	0.2
	Coda	0.5
	Coda	3.75
	<u>Average</u>	<u>3.72</u>

Table 6.1
Comparative SSR values of the Finney's first two symphonies.

Conclusion

Ross Lee Finney's first two symphonies are composed in two highly contrasting styles. At first hearing one might well imagine they were written by two different composers. However, as one begins to examine the techniques Finney employs to lend the dodecaphonic work a tonal background, one discovers striking similarities. A certain unity emerges between the two works.

The technique of leading tones (and double leading tones) represents the most remarkable similarity between the two works. Finney's use of these is as striking in the First Symphony as in the Second Symphony. The ascending and descending half-steps provide both tension and release as well as a compelling sense of forward motion.

Another similarity in style between the two works is Finney's lyrical and linear approach to melodies. The SSR of almost all the melodic material is high. When the SSR falls below 2, it is by design, as a contrast to the predominantly linear melodic approach.

Finney uses prolongation as a technique in both works. This is more striking in the Second Symphony than the First Symphony, but nevertheless evident in the earlier work.

The techniques of reiteration, metric confirmation and triads and perfect intervals, do not lend themselves well as a means for comparing the styles of the two works. Reiteration applies only to dodecaphonic technique, and metric confirmation and triads are found in all music of the common practice period. These three techniques hold interest for the analyst only in the later work.

APPENDIX A
TEACHING FINNEY'S CONCEPT OF COMPLEMENTARITY
IN THE UNDERGRADUATE MUSIC THEORY CLASSROOM

Introduction

It was pointed out in the second chapter, REVIEW OF THE LITERATURE, that almost all standard music theory textbooks teach the twelve-tone theory using almost exclusively examples from Schönberg, Webern, and Berg. The necessity for incorporating the material of American composers into the undergraduate theory sequence, at least when teaching the twelve-tone technique, is often ignored.

The purpose of this chapter will be to outline an approach to integrate the material of Finney's Symphonies in the undergraduate music theory curriculum at Trinity International University, where the present author is a faculty member. The text, Theory in Music and Practice, by Bruce Benward, is used at Trinity for the undergraduate theory sequence, and the Finney material would be an appropriate supplement.

Applying the concept of complementarity and Finney's adaptation of the twelve-tone theory to any college music theory curriculum would represent an enrichment. His use of the row is almost always transparent and easy to recognize. His use of the smaller segments of the row, the hexachord,

tetrachord and trichord is undisguised. His attraction to symmetrical forms represents an approachable initiation to row techniques for the beginning (and perhaps struggling) analyst.

This chapter will include lesson plans for three different courses, Harmony II, Form and Analysis, and Sight Singing.

In the case of Harmony II, the lesson plans will be part of a unit (Hoffer, p.364-365), the general topic of which is twelve-tone music. The general concept of twelve-tone music will have been covered, using the Benward text. The following terms will already have been covered in Music in Theory and Practice Vol. II (p.303-304) thus representing a prerequisite for implementing the Finney lesson plans: Twelve-tone technique, Order, Pitch class, Prime, Retrograde, Inversion, Retrograde, Inversion, Row, Series or Set, Numbering, Matrix.

The Lesson Plans For Harmony IIIntroductory LessonTopic

Historical and musical context of Finney's work.

Behavioral objectives

The student will be able to give a written description of the tension between atonalists and tonalists in the 1950's. He or she will be able to give a written definition of complementarity and to explain Finney's use of the term.

Materials

The instructor will lecture, following the outline of the segment Historical Background, in the first chapter of this study.

Procedure

1. Describe background information on complementarity (pages 4-8 of this study).
2. Describe the historical background on Ross Lee Finney (pages 8-9 of this study).
3. Give historical background on the early post-World War II period (10-16 of this study).
4. Ask for questions from the class.

Evaluation

The unit quiz questions 1 and 2 relate to complementarity and the historical context of the Second Symphony.

Lesson 1Topic

Rows with symmetrical hexachords, tetrachords and trichords.

Behavioral objectives

The student will be able to write twelve-tone rows which exhibit symmetry (mirrors) in either their hexachords or tetrachords. He or she will be able to analyze in writing the interval content of the row using interval vectors and SSR.

Materials

Copies of the Rows I and II and the Dallapiccola Row

Overhead projector

Manuscript paper

Procedure

1. Ask the students to copy each of the rows on their own paper.
2. Ask the students to make observations about each of the rows.
3. Lead the discussion towards observations about the hexachords, tetrachords and trichords and the discovery of the symmetry of Finney's rows.
4. Call upon the students to construct interval vectors of the hexachords, and the tetrachords at the blackboard.
5. Discuss the relative number of steps and skips (SSR) for each row.

Assignment

A take-home assignment will be given to construct three rows which exhibit symmetry in their hexachords, tetrachords or trichords. An interval vector for at least one hexachord and two tetrachords and an SSR analysis for each row will be included in the assignment.

Evaluation

The in-class work at the blackboard will provide an opportunity to evaluate comprehension of interval vectors and SSR. The homework assignment, including the rows, the symmetrical hexachords and tetrachords, and the SSR analysis, will be evaluated. Further evaluation will be given on the unit quiz, questions 3-5.

Lesson 2Topic

The techniques of triads and perfect intervals.
and of metric confirmation.

Behavioral objectives

The student will be able to visually recognize (in the score) examples of the technique of metric confirmation in the score of Finney's Second Symphony. He or she will be able to construct rows which contain triads and perfect intervals.

Materials

Same as above

Copies of the Second Symphony, first movement, measures 1-93 (p.1-15)

Copies of the Second Symphony, last movement, measures 49-64 (p. 94-95)

Music in Theory and Practice, by Bruce Benward

Procedure

1. Review previous discoveries about the row.
2. Write the middle tetrachord of Row I of Finney's Second Symphony on the board
3. Call for a discussion of perfect intervals and triads.
4. Call for a discussion of measures 72-92 of the Second Symphony to discover Finney's use of the middle tetrachord to write perfect intervals and triads in order to reach his goal of writing tonal serial music.

5. Describe metric confirmation using the following examples which have already been studied in the Benward text: Beethoven Piano Sonata in C Minor, op.13, no.8, first movement, (Benward p.169-183), and Debussy La Cathedral engloutie, no. 10 from Preludes , Book I, (Benward, p.251-259).
6. Ask the students to read through the first 63 measures of Finney's Second Symphony.
7. Ask the students to discover the many examples of metric confirmation.

Assignment

Analyze pages 94 and 95 of the score for perfect intervals and triads, and for metric confirmation.

Write three rows in which one tetrachord contains perfect intervals or triads.

Evaluation

The homework will be evaluated for the placement of perfect intervals or triads in the middle tetrachord of the rows. Further evaluation will take place on the unit quiz, question 7b.

Lesson 3Topic

The techniques of reiteration and prolongation.

Behavioral objectives

The student will be able to visually recognize (in the score) and verbally analyze the use of the techniques of reiteration and prolongation in Finney's Second Symphony. He or she will be able to write a simple composition including these two techniques.

Materials

Same as above

Copies of Finney's Second Symphony, the first movement, measures 1-30 (p.1-5), and second movement, measures 51-56 (p.51)

Recording of Finney's Second Symphony

Student's copies of the text, Music in Theory and

Practice

Record player

Piano

Procedures

1. Ask the students to follow the score while the recording of the first 30 measures of the Second Symphony is played 3 times.
2. Call for discussion leading the students to discovery of the reiteration in the first 10 measures of the movement.

3. Ask the students discuss and compare this reiteration with Webern's Wie bin ich Froh (Benward, p.305-306) and Webern's Des Herzens Purpurvogel fliegt durch die Nacht (Benward, p.307-308) (which will have been the object of their study the week before).
4. Lead discussion to the discovery of the uniqueness of Finney's use of reiteration.
5. Play the bass part from measure 19 to 31 in the first movement of Finney's Second Symphony on the piano.
6. Discuss the lengths of the notes.
7. Ask the students to suggest reasons for some notes being longer than others, discovering prolongation.
8. Play recording of measures 53-56 of the second movement.
9. Discuss the length of notes directing the students' attention towards recognizing the technique of prolongation.

Assignment

The students will be asked to apply the rows constructed in the first assignment to a rhythmic context containing both reiteration and prolongation. The composition should be monophonic. Students with a strong grasp of the concept will be encouraged to write two parts, one of which is a bass part with longer notes.

Evaluation

Each student will be expected to respond verbally in class during the discussion, analyzing the passages for the techniques of reiteration and prolongation. The homework

assignment will be evaluated. Further evaluation will be given on the unit quiz, question no.6.

Lesson 4Topic

The technique of leading tones.

Behavioral objectives

The student will be able to visually recognize the use of leading tones and double leading tones to underline tonality in Finney's First and Second Symphonies. They will recognize the altered Phrygian cadence and the augmented sixth chord as examples of the double leading tone in the Common Practice period.

Materials

Same as above

Copies of Finney's First Symphony, Scherzo, measures, 93-107

Copies of Finney's Second Symphony, first movement, measures 88-92.

Procedure

1. Review the renaissance cadence clausula vera.
2. Construct a hypothetical Phrygian cadence with musica ficta (raised 7th) at the board, including the double leading tone.
3. Review the augmented sixth chord (it is the present author's opinion that the augmented sixth chord is best understood if the double leading tones are used as the framework from the very start, as opposed to the traditional

understanding of the augmented sixth chord being an altered IV or ii chord).

4. Play the passage from the Scherzo (measures 93-107) of the First Symphony on piano.
5. Analyze the passage measure by measure, pointing out that E flat descends to D as the climax of this passage.
6. Follow the same pattern of discussion for the passage from Finney's Second Symphony, (first movement, measures 88-92).

Assignment

Using the rows from the first assignment compose 16 measures which exhibit leading tones and double leading tones. The techniques of prolongation and reiteration may also be included.

Evaluation

The class discussion, the homework assignment and question 7a on the unit quiz will provide opportunity for evaluation.

Lesson Plan for Sight-singingTopic

The major seventh interval

Behavioral objective

The student will be able to perform vocally both the ascending and descending major seventh as found in the fourth movement of Finney's Second Symphony.

Materials

Copies of Finney's Second Symphony movement IV, measures 1-4 and 20-24 (p.87-90)

Piano

Various instruments

Procedure

1. Play the passage on the piano. Ask the class to sing through the passages slowly first all together, then in smaller groups, and finally each student alone.
2. Reinforce performance of the major seventh interval by asking each student to sing the interval ascending or descending from pitches given at random.

Assignment

In teams of two the students will be asked to drill each other on the major seventh and on the Finney row as found in the fourth movement of the Second Symphony.

Evaluation

The students will be heard individually in the following class period and evaluated on their vocal

performance of the Finney row and on major sevenths from random pitches.

Lesson Plan for Form and AnalysisTopic

Arch form

Behavioral Objective

The student will be able to visually identify arch form as found in the first movement of Finney's Second Symphony.

Materials

Scores and recording of Finney's Second Symphony

Procedure

1. Listen to the first movement of Second Symphony No.2 in its entirety twice.
2. Discuss after each hearing form, and specifically where the sections of the movement begin and end and what similarities they have to one another.
3. Using alphabet letters, ask the students to divide the score into sections.

Assignment

The students will be asked to make a list of at least three suggestions as to how to name this particular form.

Evaluation

The student will be asked to identify arch form on the final exam (What is arch form?).

Quiz on Finney Portion of Twelve Tone Unit

- 1) Define Complementarity
- 2) Describe the historical context in which Finney implemented the term complementarity. Include the concepts of tonality and atonality in your answer.
- 3) Which of these four rows have symmetrical (mirrored) hexachords and how are they symmetrical?



Ex.7.1

- 4) What is the SSR of the first row.
- 4a) What is the SSR of the second row.
- 5) What is the interval vector of the second tetrachord of the third row.
- 6) Use the fourth row from question no.3 and construct examples of the following:
 - a) reiteration,
 - b) prolongation.
- 7) a) Identify in the following passage the technique of leading tones (First Symphony, Scherzo measures 103-109) .
 - b) Identify in the following passages examples of the technique of metric confirmation, and technique of triads and perfect intervals (Second Symphony, first movement, measures 88-93)
- 8) What is arch form?

APPENDIX B
INTERVIEW OF ROSS LEE FINNEY
BY THOMAS A. HUNT
DECEMBER 3RD AND 4TH, 1991

T.H.: Almost all scholars and theorists who write about you and your work consider the concept of complementarity to be central. It would seem to me to be a succinct idea to write a dissertation about.

R.L.F.: What I wrote to you is very germane to this. I was afraid that was the source of your knowledge of complementarity. And that, of course, is not enough. I mean, my concern about complementarity is rooted in the physical concern, and in a very curious way. There is a kind of a parallel between the concept of complementarity that Niels Bohr presented, the situation, world situation, in physics and the world situation in music, which, of course, happened a good deal later. The physicists, during the first couple of decades of this century, were at each others throats, politely, of course. But because, you see, the Newtonian concept of analyzing matter in traditional wave theory was no longer working with the study of atomic, small, the particle theory, you see. Therefore, I am no scientist, don't mistake me, the situation arose where almost your quantum physicist wasn't talking to you wave

physicist, or traditional physicist. Now actually, that's not so very different from the situation that began to exist in music. It had existed earlier, but I hadn't been aware of it. It existed, I am sure, at the time of Alban Berg, because Alban Berg was one of my greatest inspirations in this whole matter. But the academic view, let's say, of analysis, simply couldn't find any justification in the twelve-tone, the chromatic, the dealing with the highly chromatic situation that was obvious by the third decade of the century. So there developed a complete rift between these two ideas. My early music is very tonal, and I suppose it's very American. But that's another thing, what makes American music, really when you come right down to it, whether you use the triadic analytical concepts of music or whether you use highly chromatic concepts of serialization has nothing to do with whether you're an American composer or not. I think there were various forces that moved me to reexamine my, I like to use the word vocabulary, because I don't think I have changed one iota in my concept of music as a vehicle of expression to other people. I don't think I have changed there. But I found that my vocabulary of music was not adequate for the experiences I went through, for example, in the Second World War and various things of that sort. It never came down to that sort of dramatic situation, but I was restless with the way in which my music was going. The work that shows that most obviously is my Cello Sonata; it actually is the second, but I'm not sure I

call it that, which was written before the war, it's an early work. Certainly one of the most important early issues was Alban Berg. Because Alban Berg himself, though he devoted to serialization in a twelve-tone system and was, as you know, a pupil of Schönberg, nevertheless his music never lost the tone orientation of function. That is, he used a tonal ending at the end of the Violin Concerto. His music moves through with the strong functions of stability, instability, all of the things that come in music. Now actually, those functions aren't related. It was always obvious to me that those functions were not related to triadic system, that they exist in modal music just as much as they did in any other kind of music, that the division of space, which is of course the great job of the composer, to make sound make space meaningful. Those divisions in space, some of them obvious, like cadences, had to exist, but they didn't have to exist triadically in the way that was so commonly accepted in the 19th century. On the other hand, Viennese society and the whole attitude was so foreign to me as a kid coming out of North Dakota, there were many things about my studying in Vienna that I rebelled against, and in some ways, one of them was the whole twelve-tone business. Alban Berg had started me analyzing Schönberg's Woodwind Quintet, which was a work that one could get then. And he had shown me all the row, you see, in its four forms, and he used color to show them. I have a sketch of these, and I don't know whether it's my manuscript or Alban Berg's, but

anyhow, whether it's my manuscript or Alban Berg's, it was the set-up for the Woodwind Quintet, done as Alban Berg suggested that I do it. And its set up tonic, Neapolitan or N, ii, iii, III, IV, mid-tone, V, see that? That is setting up the row totally tonally.

T.H.: Was that Berg's suggestion?

R.L.F.: I know the crazy things students of me what I've said, and I don't want to pin down and say that was Alban Berg, because if it was in his handwriting, I don't know whether it is or isn't.

T.H.: I came across a very short article that you wrote for Perspectives In New Music 1967 on Webern's Op.6 No.1 Sechs Stücke für Orchester. You wrote as if it were exactly that, functional. You discussed leading tones, lower leading tones, etc. I wanted to ask you about it, because most people don't see that in Webern or try to avoid seeing it.

R.L.F.: I don't really remember that article. Is that work atonal?

T.H.: You mentioned your Cello Sonata as a beginning of this idea for you.

R.L.F.: Yes, as a matter of fact, it was written after the war, 1949.

T.H.: Before you wrote the Sixth Quartet?

R.L.F.: Yes, almost just before. The Sixth Quartet is the turning point.

T.H.: That's what most people seem to say. You mentioned discussions with your brother Nat and Bob Bacher, which led you to think about complementarity.

R.L.F.: Yes.

T.H.: Could you tell me a little bit about those first discussions?

R.L.F.: Sure. I was trying to lead up to it. I pointed out, that there was this dichotomy, this conflict. And finally, there were various things that had influenced me. For one thing, I knew the twelve-tone system. I mean, after all, Alban Berg saw to it. And the analysis of the Quintet is interesting, because although it's twelve-tone, and although it is organized entirely on that serial level, the first theme is on the what would be tonic, the second theme is on the dominant. In other words, that is a traditional sonata form, but using twelve-tone technique. So in doing that analysis it was obvious that Schönberg was not being led in all the parameters by serialization. I'm thinking of the background, I think the War had some effect on me, because it was violent and when I came back, there was an interim in which I didn't compose, I was doing something else. When I got back, it was in the Cello Sonata that I felt that my vocabulary was just not expressive, not expressive of what I wanted it to be in the future. I'm not condemning the work, it's a perfectly good work. And when I started the Sixth String Quartet, I started by writing a Violin Sonata. Suddenly, after composing the work in the

usual way, I realized, that the introduction I had used, had contained a twelve-tone row. And so I suddenly started composing from that time on in this sonata using twelve-tone technique. Then I put it aside and decided that I was going to use it for something or other in the quartet, but I didn't know what. And I started at the beginning of the quartet. You've heard that quartet?

T.H.: I have read Boroff's analysis. I've not had an opportunity to hear it yet. Perhaps we can dub it later. [Both looking at the score to the Sixth Quartet, and the Violin Sonata]

R.L.F.: Here at the beginning of the work, using the twelve-tone row, I liked the results. That was the way it started out. Then I came to the Scherzo. And I thought that this was a funny way to do the twelve-tone row, it's nothing but the chromatic scale, and with the left-over notes at the end of it. And that struck me as humorous. And this scherzo is, I think, kind of humorous. And then I came to the Violin Sonata that I had started and it doesn't become twelve-tone until somewhere around in here. This is not twelve-tone. It didn't make any difference to me whether it was twelve-tone or not, I saw no virtue. I mean, I don't yet see any virtue in whether a piece of music is twelve-tone or modal. Then, the last movement returns to the row of the first movement. When I got done, I wasn't satisfied with the thing and felt it should be framed, because it is erratic to use three different rows. It was

erratic, so I wrote an introduction in which all three of the rows are included, and a conclusion. That was the first twelve-tone work, if you are a little bit lenient about it. This quartet is definitely in E. To say that a work is in E and is a twelve-tone work is anathema. You don't do that, because every pitch is equally valued. Well, there was the first thing that I just didn't accept and never have accepted. I think it's gibberish to say that every note is equal. The relationship of notes changes constantly as one moves through a work. And that change is one of the main things that brings about functions. For instances, minimalists have discovered the organ point, it had been known earlier (laughs) but it's a function. That, they haven't discovered. It's a function which is stability. It holds a thing on a certain level. If you hold a thing on a level too long, why, it's boring. That's one function, a function anyone can use. And right in that earliest time I was accepting what I find is true not only in Berg's music, but some Schönberg: that the twelve-tone structure has to do with the microcosmic choice, decision of what note follows what note in the melodic line. But it doesn't influence the big points, the functional points in the work. And I don't think it does in Schönberg either. I think that the critic has plastered that on, and then also the kind of Germanic academicism. Schönberg had more of that than is good for anybody. Alban Berg had absolutely none of it. He was a very kind person. In that connection, in other words, what I am

saying is that as one composes, one plans arrival points. For one thing, when one composes, the very beginning implies what the work is going to be. If it doesn't, the composer is not doing his job. For instance, you don't have to play very much of this to know what the work is going to be like.

[plays the first few measures of the Waldstein Sonata] .. and so forth. I mean, that is like shooting a cannon at a certain angle. The force of that certainly implies a big work, so much bigger than [plays a few measures of another work] So, that's a view point that I have had from a long time back, as long as I can remember. Even when I was playing with my interest in twelve-tone music, which didn't happen, by the way, immediately after studying with Alban Berg. It didn't happen until the early 50's. I just wasn't convinced enough so that my works followed that. In these works that followed, they were all structured on a relationship of pitch polarity, I like that word better than tonality, they were structured beginning on a certain level, moving to a certain level. That to me, is just the job of the way a composer handles sound in space. And I think what happened is, the academic twelve-tone composer ignored this, so that the audience never knew where he was in the piece.

T.H.: That composer you are talking about, we won't even give him a name, that academic composer. . . . Do you think it's even possible for him to write purely atonal music.

R.L.F.: No.

T.H.: I thought that's what you'd say. Would truly atonal music be bad music? There would be no stability.

R.L.F.: You've got that damned word tonality.

T.H.: Let me put it this way, if I understand you correctly, a composer could write music without pitch polarity, and this would not be good music, it would be, in your eyes, a weak piece.

R.L.F.: I think so. Yes. That was my background. I had the lecture on creativity at the California Institute of Technology in 1953. By the way, my brother Nat, who was a very distinguished journalist, was one of the only journalists who was in on this whole business with the bomb from the very beginning. He knew all these people, he knew Niels Bohr. He was a journalist, not a musician, so he didn't speak to me about this. The idea of considering both, of using the two, quantum and traditional wave length theory to analyze matter was something that might have come up with Nat. Bob Bacher was a great friend of my brother's and we also got to be very good friends with the Bacher's. After all, he grew up in Ann Arbor, he was an Ann Arbor person. When we were at Cal Tech, it was inevitable that we saw a lot of Bob Bacher, and I remember having a long, serious conversation on this subject. I had reached the point, where I was disturbed, because I was trying all sorts of permutations, everything I could possibly think of to give a greater musicalness to what I was doing. And I wasn't satisfied. I wasn't willing to allow serialization to

dictate the spacing in the piece. In other words, I was troubled, let's put it that way, probably very much the way physicists were in the early part of this century. And I remember Bob Bacher saying, "Do you know about this theory." It sounded to him very much like the thing they had faced in physics. Why wasn't it possible to look at a piece of music, to be concerned with both. And I remember something else he said, "Very often to pinpoint a spot in space, you can't do it with one line, you have to have two." So this dualism, you see, became very important to me. Although at this time I also wrote a setting of 36 of the Joyce songs, a tonal piece, this is misleading. That piece had been in my mind for 20 years, and all of a sudden, I think it may have been a little tired of giving this thought to details in these works (Sixth String Quartet, Violin Sonata, Cello Sonata) and suddenly decided, that was the time to write this piece. I composed all 36 of those songs and heard the first performance of them in 1989.

T.H.: That turned out to be a more tonal work?

R.L.F.: Oh, it's a completely tonal work. I wasn't concerned at all with the twelve tone. I was concerned with other things. I wasn't even concerned very much with the quality of being American. Now, I am aware of the fact that no one can really define what is American, I have some ideas that I could mention. Then, after this, the variations on a theme by Alban Berg, these are written on the theme that starts the Violin Concerto. You see, Berg taught a lot more

than this twelve tone technique. He was great on variation, and he loved the idea of variations which would take the theme, but take that much time at one point, and much less or much more time at another moment. Sort of a rubbery thing (laughs). But the theme has to be marked by specific arrival episodes or events. It might be sound, it might be dynamics, it could be anything that suddenly changes. Now going down the list of my works, this I certainly was concerned with in the Viola Sonata, Piano trio, Third Violin Sonata. They all fall in there. Now my Seventh String Quartet comes in here, but the big moment was for the Menuhin, Fantasy in Two Movements. This is where I really sort of focused in on what I wanted to do. In other words, if the idea of complementarity was simply a tension doing the continuity of melodic lines using serialization, serialized technique, and total chromaticism, and the big structure was using the tonal design, that had happened earlier. But here I began to look for something more than that, which I think makes the idea of complementarity a little bit more understandable. But now, that's the next step. Let's stop there before we go on.

T.H.: To pick up other pieces with my questions. I'm interested in these discussions with Bob Bacher. When I read about Niels Bohr's ideas in this edition of Daedalus, Bohr said right from the beginning, this is not just an idea for physicists, this is an attempt to unify knowledge in other fields. Did Bob Bacher talk about that?

R.L.F.: No, he didn't. But it's interesting he brought it up. It entered his mind, which shows, that aspect of Niels Bohr had impressed him. He incidentally was also well acquainted with Oppenheimer, as was my brother. There was this group that sort of talked about that.

T.H.: In Cooper's article he starts out with complementarity.

R.L.F.: I don't think he really understands.

T.H.: I wanted to ask you about something that he said. "Ross Lee Finney's music finds its generation and dimension in opposites. The composer refers to this phenomena as the process of complementarity". He then cites examples of the use of complementarity outside the question of serial music vs. tonal music.

R.L.F.: My impression of Paul (Cooper), I'm very fond of Paul, he's a very fine composer, I don't mean to be critical at all, but my impression was that he never related this to the serial problem. Opposites are important, whether a piece is slow or fast makes a hell of a lot of difference, whether it's long or short . . . these opposites. Now that isn't complementarity.

T.H.: He goes right away into other areas, and I want to make sure I have asked you, although you seem to have already answered the question. Cooper refers to "rhythmic vitality vs. lyricism, sophisticated ideas vs. simplicity, broadness of gesture without pomposity as examples of complementarity".

R.L.F.: No, no, I don't think so. He's using the word wrong. He's really talking about contrast. Certainly the idea of musical contrast doesn't start with our century, for heaven's sake.

T.H.: We've spoken about the area of pitch polarity in the large means with twelve tone in the small. Can you think of areas within composition other than that particular area that could be touched by complementarity?

R.L.F.: I can think of things that come out of it, but I don't believe that the complementarity really has to do with them. How does one get a lyric melody if you have to use all twelve notes? Well obviously you're going to get better results if you use hexachords, six notes. And obviously it works pretty well if you just use three notes, trichords. But I don't think that has anything to do with complementarity. There is a word that's kind of a fad right now, and I've never been much of one for fads, and that is intuitive. For instance a very wonderful composer referred to his music as being written intuitively. Now, that word is dangerous. Because, what is an intuitive action? An intuitive action depends on all the inculturation of your brain. It ain't free! (laughs) I mean, you can't take somebody out of Siam and have him write a piece here, and have this intuitive expression be American. It would only be an exercise, it wouldn't be possible. So, in this complementarity will come up the question, what about intuition? Well, my answer to that is, intuition is

something you have acquired. And you don't stop acquiring in your brain, at, say, the age of 20. I must say, what you do acquire before 20 stays by you; you can't get rid of it. Another thing that I have found very hard to deal with in my own music is the linking of things in fours and twos instead of uneven numbers. I have to work to do that, to free myself from that box-like Germanic structure. One of the ways in which I do it is to sing a lot of American folk-songs, which fortunately I grew up with, with guitar. And the guitar is completely free. You can have an extra beat, you can have an extra measure, and you usually do, when you're singing. So, there are these things which intrude into the problem, but that doesn't change the major problem, which is: in the microcosmic detail of a musical work you can very well use a serialized structure, you can use a modal structure, you can use a triadic structure, the microcosmic design of what note follows what (one might be warned not to switch suddenly from one to the other, I mean, there is a need of consistency) need not to be dictated by the same method as the macrocosmic design. In the macrocosmic you use, I think, pitch polarity, or, if you insist on using the word, tonality. Atonality would mean none, no pitch polarity, and I just don't think that's possible.

T.H.: If one did actually succeed, you would have meaningless . . .

R.L.F.: Exactly! Although one realizes that you guard yourself against being too absolute about it. I think there are instances of composers who have been more elegant, more subtle in the way they have dealt with macrocosmic design, and they are great composers. But I think, if you don't control that, if your piece always stops on the dominant, there is something wrong, if it doesn't come to a solid ending that has been predicted from the very first measure . . .

T.H.: Looking down through my questions, you seem to be answering quite a few of them without my asking. Now, I'm interested in a question which arose after reading your article in The Composer's Point of View. It seemed you expressed an invitation to analyze your Second Symphony, which hadn't been done. Is this so?

R.L.F.: This would be my suggestion. You are writing about a musical work. Complementarity will influence you, but there will be other things that you will be analyzing. I thought that you might find this helpful (hands me a sheet of manuscript with rows from various works). Now the row for the Second Symphony is this one. The thing that's interesting to me is, that it is set up in two hexachords. As long as you set up a row that is made up of two symmetrical hexachords then I think the order of the notes within that set can vary. In this set here (Second Symphony excerpt) the hexachord is even divided into two groups of three. This compression into the functional, emotional

purpose of row, is very tightly done and is typical of this work. By the way, this row says String Quintet, it's exactly the same row I used in the Symphony. I had the commission to do the String Quintet and I had a hell of a time composing it in Oxford at the time. It wasn't until this row came to my mind that the floodgate was opened. Now you see, it does actually suggest the possibility of two other rows that were very much related to the first. So, I realized I was working in a territory in which there was an enormous potential. The Second Symphony was composed immediately after the Quintet. The thing that really motivated me to go on was, that I found this number series fascinating. Why would anybody interested in that kind of series? Well, the reason I was interested, was because it seemed to me my music was getting to much fours and twos and these traditional shapes that are very important in folk-music, although I think the best folk-music also has a lyricism. And so, you see, the harmonic situation follows the row, the notes themselves. But these here (points to an accompanimental figure in the first movement of the Second Symphony) are dictated by the numbers. You immediately run into some crazy problems, what the hell do you do with number one? It's sort of a hiccup, and so on (laughs). Well, would you like a copy of the Second Symphony?

T.H.: Thank you very much. That's very kind.

R.L.F.: So, you see, the numbers are also dictating the harmonic rhythm. I don't know what you'd come to if you

followed it all the way through the movement. It doesn't have anything to do with complementarity but rather with rhythm.

T.H.: Boroff talks some about this serialization of rhythm and says when you began your Third Symphony, during the time you were finishing the Second Symphony, that you abandoned this kind of approach. She makes the suggestion that you had moved away from complementarity in the Second Symphony in overserializing, that in your own mind there had begun too great an accent on serialization, and that you moved away from that, more towards a center, as it were, in your Third Symphony.

R.L.F.: It just shows you, she doesn't know what she is talking about when she comes to the word complementarity. It doesn't have anything to do with it. In complementarity it's perfectly obvious that you are going to choose or find essential points, which, I think, are here and here (pointing to passages in the symphony). You would go through and find the essential pitch points, almost always in the bass line, not always, but often. You're not going to concern yourself with all this, with the succession of one note after the other. To the ear, this note is much more important than that note. This extremely high note here, even if I put a sharp in front of it, isn't that important. It would be wrong, the performer would know the difference, but it wouldn't change the piece. You understand, every note is important, but just some notes

more important than others. The spaces have been chosen to avoid the too common emphasis on fours and twos.

T.H.: Samuel Adler called them baroque rhythms.

R.L.F.: Well, yes . . . Well, you know (and sings in German, "Hopp, hopp, hopp, Pferdchen lauf Galopp, über Stock und über Steine . . .") That doesn't appeal very much to me. Do you want me to tell you about American music . . . because this is an experience I grew up with in North Dakota. I worked my way to Europe by playing in a jazz orchestra. I was never a good player.

T.H.: What instruments did you play?

R.L.F.: I played the piano and the cello. They used me enough, but I wasn't a very good jazz player, but . . . it was common practice, when you started you went (beats foot twice with a strong pulse). You gave the rhythm. Now, it made me realize, you kept that rhythm . . . inflexibly. Because, only by doing that could you allow breaks. The music would move in this inflexible meter to a point, and then the break. Now the break could do almost anything he wanted to; I mean, as long as he got back to the meter. He didn't even really have to do that. He stopped and the orchestra went on with the meter. The orchestra never changed that meter in a piece. It was just inflexible. This seemed very interesting to me. I find I have a perfectly awful time with performers, because they are always trying to give it a French rubato . . . or a German rubato. These are totally foreign to my music. My music is

much more like a rap session. A rap dance, where there's an absolutely even rhythm, and they do all kinds of unexpected things to jar loose. So, that tightness of meter is, I think, very important. Whether one uses serialization or not is a matter of style. I don't know if one can predict why a composer uses a certain technique. The way I compose now is to reduce the row to its most compressed shape, because I don't think you need to heed the order in every hexachord. I don't heed the order, as long as the tones of the hexachord are included.

T.H.: I had interrupted you when you wanted to delve into the question of American music.

R.L.F.: That was just the one thing! My own feeling is, you can't really go any further. I don't know what an American composer is. I know I'm American. I don't know what else I'd be. But this steady pulse thing, I think is very important. About the time, the early sixties I realized there were two directions I could follow. Writing this work (Second Symphony) was exhausting, and all the time I had been thinking about the Third Symphony and I wrote it very rapidly. It was the only work that I have ever written in score, right off the bat. It is concerned with something a little different. It's more hexachordal. It's concerned with having certain melodic aspects of the hexachord reflect different emotional loops or states.

T.H.: When Gerald Holton is making his conclusion here, he says, "even those who in their professional work in

physics have experienced the success of the complementarity point of view first hand, find it hard or uncongenial to transfer to other areas of thought and action as a fundamental thematic attitude the habit of accepting basic duality without straining for their mutual dissolution or reduction. Indeed we tend to be first of all reductionists, perhaps partly because our early intellectual heroes have been reductionists (and then he names . . . and Freud instead of James and Kierkegaard). Was accepting basic dualities without straining for their dissolution difficult for you at first? It seems you're saying you were beginning to do it before you even heard of complementarity.

R.L.F.: I think so. I worked at that. In other words, the reason complementarity became so important, so valid, as a word even, I think I had been moving in that direction all the time.

T.H.: Has it become a universal attitude of yours, that is, when you are considering topics outside of music?

R.L.F.: No, I am not the genius Bohr was. And anyway, music is an art. I don't know that art would ever become as seriously involved with complementarity. After all, it's not going to lead to the atom bomb.

T.H.: I understand that, when Bohr was given a certain award, he saw to it that the symbol of yin and yang were represented in the emblem. In other words, he saw that as complementarity.

R.L.F.: He did. There is no question about it. I suppose, maybe, if I thought more about, I would too, but it hasn't become that. Well, yes, when you are raising children, you have the firm hand and the one that always gives in, and you need both. Both are important. And this is sort of instinctively known, and after all, this business about locating a point, you can't do it from a single vantage point.

T.H.: What particular pieces of yours best exemplify complementarity?

R.L.F.: Complementarity was an expression that I was concerned about very much in the 50's. And I didn't know which was going to win out, whether I would move to a more rigorous control . . . you see, there was always the possibility that I was wrong, that the pitch polarity should be separated from the microcosmic. But the macrocosmic should be the same, using the same thought process that the microcosmic is using. There was always that possibility, that they should be one thing, not two. From the standpoint of an individual style, you need to feel that the big form should be similar to or at least come from the same source as the other. I think that has pestered many a composer and often has led to the writing of very short pieces.

T.H.: In your little article on complementarity in Goossen's book, you mention both Sessions and Boulanger as saying that the unity must be there, that you had learned that there must be the one and not the two. You are saying

that in the fifties, you were dealing with trying to work with the two, but all the time thinking, I may return to the one.

R.L.F.: You see, even in an academic use of twelve-tone, you can get into the bass anything you want, if you control things in a certain way. You have to work to do it. It isn't just something you do instinctively, you have to work at it. But you can accomplish it. But then you run into the fact that you are making one note more important than another. Well, what do you do with that? But nevertheless, there was that seed of doubt, of thinking the potential is certainly in serialization. You can make a serial structure if you want to, if that's an advantage. I've answered that question in my work. But at that time I wasn't so sure of just what the answer would be, and it led to some very peculiar mixtures. I must say the works like Three Studies in Fours and my Concerto for Percussion and Orchestra and my Second Piano Quintet, these are almost totally serialized works, and I can't say they're my favorite works. I have a feeling that they're too rigorous.

T.H.: Would you put the Second Symphony in there?

R.L.F.: No. The Second Symphony seems to me, well, it fits. And, what's more, if you were to go through that symphony and try to work that out (pointing to serialization of rhythms in the first movement of the Second Symphony), you would finally discover that I had tired of it. (Laughs) I just couldn't continue, it was hard as hell to write, but

pretty soon I came to the feeling that it wasn't worth bothering about. But that didn't mean that I threw this away, I liked the sound of it, I liked this symphony, and in some ways I like it almost better than the third. It's a very tight work.

T.H.: The rest of the questions I have are relating to people. There was a Spaniard you knew . . .

R.L.F.: Oh! Roberto Gerard.

T.H.: Right.

R.L.F.: That's kind of an interesting story, when I was in OSS during the war. I was stationed in Europe before going into Paris. I was kind of lonesome. I went to Cambridge. I had work I needed to do and I needed a good library, and of course Cambridge had one. And the buzz-bombings were more tolerable in Cambridge. When I got there I went to the English speaking union. They suggested two people. One was a string quartet, and the other was Gerard. Well, I got acquainted with him at that time. They were just lovely, very kind. And after the war I met them again in various places. I always respected his work very much, do you know his music at all?

T.H.: No.

R.L.F.: It should be better known. But of course one can understand that in England, well it isn't English, at all, nor is it Spanish. So when I was invited to be in the academy in Rome I decided the University could use my salary

to bring him to Ann Arbor. In this picture here you see him with some students.

T.H.: Boroff makes the suggestion, well, she's trying to contrast two different sources in America, the academic and the practical, as two different camps. And she is saying you were, because of your background a very practical musician who ended up in academia. You are a mixture of the two, and that you were attracted to people like Gerard, because he represented this almost bizarre mixture of very conservative Spanish training, along with studies with Schönberg, parents of two different nationalities, etc. Boroff suggests his very complementarian kind of personality made him an attractive friend for you. She doesn't say it in those words, but the implication cannot be overlooked.

R.L.F.: That is going a little far. After I had worked my way over to Europe and studied with Boulanger, I had to come back and make a living. I was very much in love and wanted to get married. Where could I get a job? I had no particular desire to be a teacher, but I was helped by the fact that my father was a teacher at the University of Minnesota. The academic environment didn't scare me. I think most of that talk is moonshine don't you? The academic environment has its faults, God knows it. I can get awfully mad at the administration, but I don't think it's any worse than any other. I will admit there can be an academic attitude that is pompous and lacking in any breadth, I mean it's narrow. I think I would agree with

Boroff that I don't think the academic environment is the ideal one for the composer or the performer for that matter. But it's got a lot of virtues and as long as the person connected with academic environment remains aware there is a larger world of music out there . . .

T.H.: Now I want to talk about Gunther Schuller, and how you mentioned on the phone that he was perhaps someone who had moved in similar directions to you.

R.L.F.: Well, I never talked to Gunther about this, and I don't know what he'd say. Well, I am thinking of a piece I heard by him for string quartet and symphony orchestra, and I was very impressed with the fact that it sounded like a work that was constructed on a symmetrical hexachord. It had the qualities that I recognized as a rising from that sort of technique. I have heard similar observations from others about Gunther's music but I cannot be sure, because I have never spoken to him about it. I don't like all of his music, some of it I do, some I don't. But that is true of all every composer, you know. I have a feeling he almost always has the instinct to shape his music in ways that have nothing to do with serialization. Now, you don't have to shape your music necessarily by pitch polarity, you can do it purely dramatically if you want, you see. Till Eulenspiegel isn't just pitch polarity, the shaping of that piece is obviously based on a story. You can do that. I don't see how you would avoid also having pitch polarity. You know sometimes a composer will have a definite "itch"

that is motivating the work emotionally. It's usually better if the composer doesn't tell anyone. What was the remark Beethoven made, if you want to know what this piece is about read The Tempest. Well I read The Tempest and I'm not sure I see the connection. But, who knows? Maybe there was a relationship.

Now I have a very clear recollection , a good memory of the process of composing, and years later can almost recapture the agony. Composing is a tormenting job. It isn't ecstasy by any means. It represents the application of the seat of the pants and the focus of the brain on what you are doing. I remember almost every work. Well now for instance, the work that your faculty performed in Finland, the work is a rather important work, it uses not only the serialization, I don't remember exactly, but I think probably symmetrical hexachords. The structure of the one proceeds through the first movement, then there are some improvisational movements and the last movement begins where the first movement ended and ends up at the beginning again. This is not important at all. What really lies behind the work is memories of night on the town in Paris when I was in my 20's. Each movement is somehow . . . well, in other words it's almost a painting. That is something I'd just as soon the critic didn't know. But it is very important in my work, because more and more I've come to feel that memory is very basic, and comes to be more and more basic, in my music. Well, here for the fun of it , let me play for you

Narrative in Retrospect. This is certainly complementarity, the emphasis I give to the bass, etc.

There is another thing that I think you should keep in your mind: Everybody talks, all the time, about rows, these highly chromatic rows that have no relationship to music you grew up with. For instance, the Greek composer, Skalkodis, started sort of a rebellion among young Greek composers, because the rows eliminated the use of their national music. For instance the row with this hexachord (plays F, C, G, D, A, E, in all different octaves) which is really just this (plays them diatonically), followed by this: F sharp, G sharp, A sharp, B, C sharp, D sharp, . . . well, the point being that twelve tone music suddenly blossomed under Schönberg, is crap of course. It's got roots like any other style. After all, the triadic style didn't suddenly come from nowhere. Well, that row I have used extensively in an orchestral work called Landscapes from Memory. Memory is becoming very important in my music. Maybe this has something to do with my age. Maybe as you get older memory has a more poignant effect. (We listen to the recording of the Inventions for Piano).

Now right here, (pointing to score), I didn't know I was going to quote Chopin when I started out. That happens to be from a piece I played with great lust as a child. I don't know if a critic would notice that, but they certainly wouldn't know to connect it to my memory.

T.H.: When did you first decide you could change the order within the hexachord?

R.L.F.: Right here in the Inventions. I must admit I hadn't formulated the idea of the symmetrical hexachord. Well, naturally, I knew Hauer, do you know Hauer?

T.H.: I've read some . . .

R.L.F.: Don't you know his chart? I used to have one around . . .

T.H.: But I wasn't sure that it eliminated the necessity of maintaining the order.

R.L.F.: I must say, my impression of Hauer is that he has all the notes going all the time. There is a book that has the Hauer tropes. That did have a very strong influence on me. I knew of Hauer and heard a lot of his music when I was in Vienna, studying in the 30's, with Berg. He was so systematic, (laughs). His music is, I think, ridiculous. But, the idea of tropes, the hexachordal thing . . . certainly the debt is to Hauer there, not Schönberg. Schönberg never seemed to, well except for glimmers, for instance in the Fourth Quartet . . . well, he seemed to be very satisfied with where he was, knew all the answers, and was going to revolutionize the world of composing--a rather Germanic view (laughs). He was a great composer, but . . . when I think of my friends, Gerard and Dallapiccola . . . well I read an article by Dallapiccola where he apologizes for being an unorthodox twelve-tone composer. Of course, I think that is his great virtue.

T.H.: He'll change a note from time to time

R.L.F.: Yeah. Music was music, regardless of how it was being written. Music had to talk, it had to speak. Now Milton Babbitt would be humiliated with this piece. I respect him, he's very consistent, very strong, small works, but they don't communicate to me, and I think the job of music is to communicate.

T.H.: What about someone like Rochberg, writing . . .

R.L.F.: Rochberg doesn't have the gusto go *through* the thing and come out the other end. He's aware of the fact, the poverty that twelve-tone music imposes. So what do you do? Do you go back? He's not a conservative, he's a reactionary. I don't like a reactionary, in music or anything else. Well now I've put that on tape, Rochberg is a good friend of mine, and I admire him, very much, but, I don't like all of his music. But I don't like all of Beethoven's music either.

T.H.: Quite a few students of yours, George Crumb, Leslie Bassett, have become prominent American composers. Tell me about your students.

R.L.F.: Roger Reynolds, Albright, Gerald Plane, do you know him, a very fascinating composer (laughs). He's from Tennessee, has Tennessee all over his music, very interesting, quite radical really. There is Onderdonck, of course.

T.H.: In one of these interviews you mention a student who came from another field but wanted to know more about

writing music, and that this kind of student interested you a lot.

R.L.F.: Not to make them composers. I started a course for students that were not majoring in composition, who wanted to compose. I organized the class into an orchestra, a performance group. They composed music for it. You know, it's not a great problem composing music. Well out of that class came several composers who were deeply interested in other fields, like Roger Reynolds, who was an engineer.

By the way, when we meet tomorrow, maybe you ought to talk some more . . .

Next Day

T.H.: I found this little volume in the University library, The Game of Harmony. Could you tell me about it?

R.L.F.: Well, my wife is, of course, a scholar, and she happened to be lecturing at Columbia, for a week or so. Our boys were young, around eight or so. And of course they got sick, as always happens when Dad is in charge. And I wrote The Game of Harmony for them to do for the fun of it while they were sick.

Well, you know that a composer doesn't compose for theory but rather for performance. When he composes for theory we get closer to what we've been calling the academic composer. So, when I teach composition it is always important to pay attention to that performance outlet.

T.H.: You wrote a two page article in the early sixties for the Music Educator's Journal, a two page article about teaching theory. Now I have been teaching some of the theory courses at UF, and I am somewhat discouraged by the emphasis on learning to write in four parts and avoid parallel fifths. What do you think about the typical undergraduate theory approach?

R.L.F.: Well, you have to realize that you are teaching theory to whole bunch of students, most of whom are not going to be composers, or aren't even going to be musicians. Some, will be singers, well, that is not fair, there are some singers who are really well informed. So you have to realize that you are offering a little bit of insight into the whole procedure. And there are books that work at this problem. I don't think there is any book that I know of that is any much good, really . . . you make your choices and you teach from what you can get. My feeling is that theory comes out of composition. If theories of music exist outside of that then they fall into acoustics, or some kind of other category. They belong to the science of music rather than the art of music. Now a music department is generally concerned with music as an art. Most students would be better off if they forgot about harmony and counterpoint. I remember Boulanger used to say that to me. Studying harmony may not do them very much good, they may hate it. If they do they won't get anything from it. Same thing with counterpoint. I remember a friend of mine once

said, he just loved the do counterpoint going down on the train to New York. Well, that is a nice place to do counterpoint, and counterpoint can be fun. Someone might even get to the point where he can write Dubois fugues by the ream, but it won't make him a composer.

T.H.: Until a few years ago the only music I had written was pop music, playing the guitar, etc. Studying counterpoint seems to change my idea about writing music, especially regarding time, the question of when musical events occur.

R.L.F.: Yes! Well I like counterpoint, and I think I've learned a lot. I think the student often misses some of the most important lessons in counterpoint. For instance you start your counterpoint with a rest. In other words, you don't have things happen at the same time. Some thing happens in the cantus firmus, then something else happens, but it doesn't happen on the first beat. That's terribly important. I mean to get that sense of eventfulness that is elegantly employed within the meter.

All I am saying is that composition furnishes the stuff for theory, but theory doesn't furnish the stuff for composition.

T.H.: Dr. White and I talked about the exception, perhaps, of the twelve tone method. This may be a theory which produced composition, whereas, throughout music history composition has produced theory.

R.L.F.: Well, I think that's what's wrong with it.

T.H.: I would like to turn back to some of our discussion yesterday about American music. You discussed a steady motor, beat by beat, containing various accents. This made me think of Stravinsky.

R.L.F.: In Stravinsky this can be looked at in another way. This can be seen as a revolt against Romanticism. That was one of the main ways of revolting against Romanticism. It wasn't the only way. It seems to me that Stravinsky got involved in ways of revolt against Romanticism that lead him to say that music has no meaning, and absurdities like that. So it isn't quite the same thing. No American composer, popular or otherwise, who has this drive of even meter, this strong even pulse, would go on and say for this reason music has no meaning. Now on the other hand, I suppose one could make a case for American music, as far as it exists, as being a revolt against Romanticism.

T.H.: It does seem that Stravinsky sometimes overstates his case. In the introduction to my dissertation I cite this as an example of two opposing ideals in music, with Stravinsky saying there is no extra-musical meaning in music, or then the Brahms vs. Wagner controversy, which Hanslick so ably exploited. Well these represent opportunities to look at two complementary things . . .

R.L.F.: I'm afraid that I do not see that as the same kind of complementarity that comes from the science of physics.

T.H.: Bohr wanted to take it into other areas. What does it look like when it goes into other areas? Well, even last night, I was discussing with friends an area of Christian theology, that God is in charge, He is sovereign, and man has responsibility.

R.L.F.: I call that duality.

T.H.: You can't put them together.

R.L.F.: All right, I can see your point. Is complementarity the same thing as duality?

T.H.: Well, Holton, right here in this long article talks about the habit of seeing a duality and not trying to make them be the same is the habit of thinking in complementarity.

R.L.F.: That is a good point.

T.H.: I am going to be using these examples.

R.L.F.: Yes, (laughs) I can't write your thesis, I couldn't. So you have every right to do that.

I came across a fascinating article, I don't know if it was in the Daedulus or where. There was an article about music being the beginning of the concept of the fourth dimension. This happens when the sense of meter within time was invented, of what appeared on a first beat and a third beat and so forth. I'm not putting this very well. I must admit, when I've tried to say this to others they've looked kind of glassy eyed, as though I'm nuts, and I guess I am a little nuts. It was this concept of time, as it relates to space that he was talking about. He says that Galileo drew

from this. I'm on shaky ground, but this whole question of time has to do with complementarity. It was this Franconian revolution in music, where you have this idea of meter, and strong and weak beats furnish a sort of inner reality to time within the measure, while you had the larger units of measures adding up to pieces. This article was saying this has to do with the fourth dimension.

T.H.: The last questions I would like to ask do not have to do with complementarity. We are now almost at the year 1992, moving towards a new century. What kind of things do you think are going to happen in terms of writing music, playing music, and teaching music, especially with regards to higher education.

R.L.F.: That's a dangerous question to ask somebody who is 85. Someone wrote a column, I think it was Russell, and he made the point that one of the great problems of age is loneliness. I think that is true, that as you get into this stratosphere, you become lonely. Why? Because your expectation about what could happen, say with regard to music, as in question, recedes further and further: it doesn't happen. I admit that I wonder, what will happen in the next century as far as musical development. I have enormous faith in the capacity of young students. I am sure something important and valuable will happen, simply because they are human beings with good brains and good sense, musical sense. I don't think that our administrators will be able to keep them down (laughs). Some things pop up.

Now there is the idea that folk music, popular music is the only thing that has been contributed by the U.S. Now that is a preposterous statement. There has always been popular music, and often that popular music has been very important. For instance in Vienna there was the waltz. Now we do not belittle the waltz, but we don't say it was more important than Mahler's symphonies, or something like that. That is stupidity, and yet this kind of stupidity goes on. And why does it go on? One reason I think is because of the media. I think the adjustment to the media has taken a long time, but I see now that people have been fooled long enough by the television and newspapers, a kind of revolt. I see a lot of young composers who don't accept at all the notion that they need to be involved in popular music if they want to contribute at all. It runs off them like water off a duck's back, it has no effect on them. They have courage, and imagination that is just as great as my generation had. With regard to teaching I think there is a change in teaching, but this has more to do with electronics, which has done amazing things. I find that schools, and sometimes students too, are awfully stupid about how they approach this matter of electronics. Well, electronics makes it possible to have a library of sounds. That is very important. It makes scholarship a very different and much harder endeavor, because it means you can't just refer to what someone has done in composition, or you have to have to know what it sounds like. You can't just refer to a work,

you have to know the work, you have to listen to it. This is a revolt. It's going to stimulate scholarship musicianship.

Regarding the whole question of popular music I am a member of the Academy of Arts and letters. We have often had the discussion about why we appointed Duke Ellington to the Academy, but not Louis Armstrong. Armstrong is an important figure in American jazz, but he never wrote a note. If you appoint him you are appointing him, because of the publicity of his name, and because you were fortunate enough to hear his music performed. A wonderful talent he had! But he hasn't got anything else. Now Duke Ellington was a composer, he wrote his music down. But along comes recording, and the whole thing has to change. Now you can listen to the entire works of Armstrong, on record. Our judgement would today probably have to be different. You see, it has made a difference in so many ways.

T.H.: I am fascinated with a musical culture which has brought forth the written record, the notation of music ideas in writing which would allow me to accurately communicate my thoughts to someone else, far a way in space or time. This is not a characteristic of other musical cultures and sets Western music apart. I wonder whether the advent of the recorded composition, or recorded improvisation will impact this phenomenon.

R.L.F.: Well, you enter into an argument about the legitimacy of writing down music for someone else to play.

Now I was once asked at NYU what I would suggest for courses in electronic music. I responded there should be two courses. The introductory one would of course be in analog electronic music. You see, this kind of composing demands a consideration of space and time, inches on a tape as it were. You make the sound that you want in terms of inches. That means that you are making, you are controlling the sound. The digital composition asks you to push a button. Now let us say we are talking about a French horn sound. I've never pushed one of those buttons and heard a French horn sound that was worth a damn. These machines are set up for rock bands so in the end it all sounds like a cliché. So electronic music is turning into theft, plagiarism. Why do they go on doing it? Again, because of the pressure of the media. It is so much less expensive to do that way, than to pay four musicians, well you know all of this.

Over here at the University (University of Michigan) they have washed out the entire analog portion of the electronic music lab. This is not the case at Columbia, at NYU, etc. and they were advised not to do it by Mario Davidowski, who was responsible for setting this up. Well, the dean wants to be modern. He doesn't understand anything about the electronic medium. So our composition students will miss the opportunity of taking advantage of this wonderful electronic instrument.

T.H.: What about the frustration of what I sensed as a young player at Oberlin in the early 70's with regard to young composers and composition students thumbing their nose not only at the audience but also at the players as if the player and the audience were unimportant, and only the composer mattered.

R.L.F.: You are quite right. Somehow I can't help but think that this whole complementarity thing enters in here. If you have no harmonic rhythm, if you don't have the feeling that the music is going somewhere, you don't have the feeling that it arrives somewhere, it's like travelling on the road and having no road signs. It's unhealthy. And this has never been true of any other period of music, but seems to be a pattern amongst academic twelve tone composers. My feeling is that, by trying to increase the vocabulary music should not become something the listener cannot follow.

T.H.: Well, as far as my topic is concerned I think this is the end of my questions. I'd like to thank you for spending time with me.

R.L.F.: And I would like to thank you for two engaging afternoons. You have done a lot of research and have put a lot of thought into this interview. I am looking forward to reading your dissertation.

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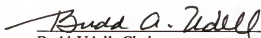
BIOGRAPHICAL SKETCH

Tom Hunt was born on April 26, 1951, in Columbus, Ohio. He graduated from high school at the Interlochen Arts Academy in 1969, and from the Oberlin Conservatory in 1973. From 1973-1987 he held positions as French hornist in Innsbruck, Austria, and in Wiesbaden and Essen, Germany. From 1987-1993 he was a graduate student at the University of Florida, receiving the degree Master of Music in Instrumental conducting in 1989.

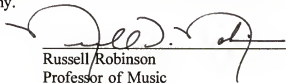
Mr. Hunt is presently a faculty member at Trinity International University in Deerfield, Illinois, where he teaches theory and directs the instrumental music program. He remains an active French hornist performing with the Lyric Opera of Chicago and the Trinity International University Faculty Woodwind Quintet and Brass Trio.

He is married to Angelika Hunt and has three children by that marriage.


I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.


Budd Udell, Chair
Professor of Music


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Russell Robinson
Professor of Music


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Camille Smith
Associate Professor of Music

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David Kushner
Professor of Music

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Franz Futterknecht
Professor of German

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Leslie Odom
Associate Professor of Music

This dissertation was submitted to the Graduate Faculty of the College of Fine Arts and to the Graduate School and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.



Dean, College of Fine Arts

Dean, Graduate School